

1  
2  
3  
4  
5  
6 **The human *in vivo* biomolecule corona onto PEGylated**  
7 **liposomes: a proof-of-concept clinical study**

8  
9  
10  
11 Marilena Hadjidemetriou<sup>1</sup>, Sarah McAdam<sup>2</sup>, Grace Garner<sup>2</sup>, Chelsey Thackeray<sup>3</sup>, David Knight<sup>4</sup>, Duncan  
12 Smith<sup>5</sup>, Zahraa Al-Ahmady<sup>1</sup>, Mariarosa Mazza<sup>1</sup>, Jane Rogan<sup>2</sup>, Andrew Clamp<sup>3</sup> and Kostas Kostarelos<sup>1\*</sup>  
13  
14  
15  
16

17 <sup>1</sup>Nanomedicine Lab, Faculty of Biology, Medicine & Health, AV Hill Building, The University of Manchester, Manchester, United Kingdom;

18 <sup>2</sup>Manchester Cancer Research Centre Biobank, The Christie NHS Foundation Trust, CRUK Manchester Institute, Manchester, United Kingdom

19 <sup>3</sup>Institute of Cancer Sciences and The Christie NHS Foundation Trust, Manchester Cancer Research Centre (MCRC),  
University of Manchester, Manchester, United Kingdom

20 <sup>4</sup>Bio-MS Facility, Michael Smith Building, The University of Manchester, Manchester, United Kingdom;

21 <sup>5</sup>CRUK Manchester Institute, The University of Manchester, Manchester, United Kingdom

22  
23  
24  
25  
26  
27  
28  
29  
30  
31 \* Correspondence should be addressed to: [kostas.kostarelos@manchester.ac.uk](mailto:kostas.kostarelos@manchester.ac.uk)

1  
2  
3  
4  
5  
6

## Abstract

7 The self-assembled layered adsorption of proteins onto nanoparticle (NP) surfaces, once in contact  
8 with biological fluids, has been termed the 'protein corona' and it is gradually seen as a determinant  
9 factor for the overall biological behavior of NPs. Here, we describe the previously unreported *in vivo*  
10 protein corona formed in human systemic circulation. The human-derived protein corona formed  
11 onto PEGylated doxorubicin-encapsulated liposomes (Caelyx®) was thoroughly characterized  
12 following the recovery of liposomes from the blood circulation of ovarian carcinoma patients. In  
13 agreement with our previous investigations in mice, the *in vivo* corona was found to be molecularly  
14 richer in comparison to its counterpart *ex vivo* corona. The intravenously infused liposomes were  
15 able to scavenge the blood pool and surface-capture low molecular weight, low abundant plasma  
16 proteins that could not be detected by conventional plasma proteomic analysis. This study describes  
17 the previously elusive or postulated formation of protein corona around nanoparticles *in vivo* in  
18 humans and illustrates that it can potentially be used as a novel tool to analyze the blood circulation  
19 proteome.  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29

30 **Keywords:** biomolecule corona, Doxil®, ovarian cancer, nanomedicine  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65

1  
2  
3  
4  
5  
6  
**Introduction**

7       The surface identity of nanoparticles (NPs) is modified once injected in the bloodstream  
8 because of their spontaneous interaction with a wide range of surrounding proteins and other  
9 biomolecules.<sup>[1]</sup> The spontaneous and layered adsorption of proteins onto NPs has been termed  
10 the ‘protein corona’.<sup>[2]</sup> Even though surface modification of NPs with hydrophilic polymers (e.g.  
11 PEGylation) results in diminution of protein adsorption onto NPs surfaces, the complete elimination  
12 of protein corona formation has not been achieved so far by such functionalization strategies.<sup>[3-7]</sup>  
13 During the last decade protein corona research has gained popularity with a flurry of attempts  
14 made to molecularly characterize corona profiles after the *ex vivo* incubation of NPs with biofluids  
15 (mainly plasma) and more recently, *in vivo* (in rodents).<sup>[4-7]</sup>

16       The biological effects arising from the presence of biomolecules onto NPs surfaces can be  
17 both unfavorable and advantageous to their biomedical applications.<sup>[1, 8]</sup> It is now reasonably  
18 established that the protein corona defines the NP surface characteristics and forms the interface  
19 between NPs and biological systems, also referred by some to as the ‘bio-nano’ interface. The  
20 presence of the protein corona mediates the interaction of NPs with cells and has been shown to  
21 significantly impact on their cytotoxicity, cellular internalization and targeting capability.<sup>[9, 10]</sup>

22       Among a plethora of nanoscale drug delivery systems, liposomes (phospholipid-based  
23 vesicles) are considered to be the most clinically-established nanomedicine constructs.<sup>[11]</sup> The  
24 substantial reduction in the cardiotoxicity of doxorubicin upon encapsulation within PEGylated  
25 liposomes led to the approval of the first nanoscale anti-cancer agent (Doxil®, Caelyx®) by the  
26 FDA in 1995 for the treatment of AIDS-related Kaposi Sarcoma and in 1999 for the treatment of  
27 recurrent ovarian carcinoma.<sup>[12, 13]</sup> This liposomal construct shows superiority to free doxorubicin  
28 owing to its prolonged blood circulation time, the stable retention of the drug in the interior of  
29 liposomes while in blood circulation, leading to an overall improved toxicity profile and enhanced  
30 tumor accumulation.<sup>[12, 14]</sup>

31       Despite the clinical track record of liposomes for more than 20 years, the role that protein  
32 corona plays in liposomal pharmacology has been barely studied. To date, only a few studies  
33 describe the molecular composition of the protein corona formed around NPs *in vivo*.<sup>[4-6, 15]</sup> In the  
34 vast majority of investigations, NPs are characterized after their *ex vivo* interaction with plasma  
35 proteins (mouse or human), extrapolating on the erroneous assumption that corona fingerprints  
36 formed under such a static biological setting can reflect the dynamics and molecular richness of the  
37 *in vivo* milieu.<sup>[1]</sup>

38       In our previous studies, we developed a robust protocol to retrieve and purify NPs from blood

1  
2  
3  
4 to investigate the *in vivo* protein corona formation and its evolution onto clinically-used liposomes  
5 after their intravenous administration (tail vein) in rodents. These studies revealed that the molecular  
6 composition of the *in vivo* protein corona cannot be sufficiently predicted by the *ex vivo* plasma  
7 incubation of NPs.<sup>[4-6]</sup> Blood flow dynamics, the interaction with blood circulating cells and immune  
8 responses triggered after NPs administration are some of the factors that cannot sufficiently be  
9 simulated by *ex vivo* studies and could explain the differences observed between the *ex vivo* and *in*  
10 *vivo* formed protein coronas.<sup>[1]</sup> Although *in vivo* models shed light on our understanding of the self-  
11 assembly mechanism of the protein corona formation under more biologically-relevant settings,  
12 extrapolation of data from mice to humans should be made with extreme caution.<sup>[16]</sup> Nanoparticle-  
13 based systems that work efficiently in rodent disease models often fail to offer similar efficacy in  
14 humans.<sup>[17]</sup> Yet, the formation of a protein corona around blood-circulating nanoparticles in humans  
15 has not been experimentally described at all, let alone studied as a potential factor to explain such  
16 discrepancies between preclinical and clinical achievements.

17 In the present study, we attempted to investigate and characterize the *in vivo* protein corona  
18 formation in humans. PEGylated, doxorubicin-encapsulated liposomes (Caelyx®) were infused  
19 intravenously in six patients with platinum-resistant recurrent ovarian carcinoma and subsequently  
20 recovered from the blood circulation immediately on completion of their first cycle of Caelyx®  
21 treatment. Liposomes were isolated from blood components along with their formed protein corona  
22 which was quantitatively and qualitatively characterized using a battery of techniques. The data  
23 indicated that an *in vivo* human protein corona forming around intravenously-infused liposomal  
24 nanoparticles can be reproducibly identified and molecularly described. The human *in vivo* protein  
25 corona was rich in multiple low molecular weight and low abundant plasma proteins that could not  
26 be detected by conventional plasma proteomic analysis, which revealed the potential utilization of  
27 the biomolecule corona as a tool to address the issue of the high dynamic range of plasma  
28 proteome.

## Results and Discussion

**Physicochemical characterization of liposomes and human *in vivo* corona-coated liposomes.** To characterize the *in vivo* formed, human-derived protein corona, PEGylated doxorubicin-encapsulated liposomes were recovered from the blood circulation of ovarian carcinoma patients ( $n=6$ ) at the end of their first cycle of intravenous Caelyx® infusion (at a dose of 40 mg/m<sup>2</sup>), for platinum-resistant disease (**Figure 1A**). Patient clinical and basic blood analysis characteristics are summarized in **Table S1**. The physicochemical properties of the commercially available PEGylated doxorubicin-encapsulated liposomes (Caelyx®) were investigated by dynamic light scattering (DLS),  $\zeta$ -potential measurements and negative stain transmission electron microscopy (TEM) before and after their intravenous infusion in patients and are summarized in **Figures 1B and 1C**. Liposomes had a mean hydrodynamic diameter of 82.6 nm, a negative surface charge of -33.8 mV and displayed low polydispersity values (<0.1) representing a narrow size distribution (**Figure 1B**). TEM imaging showed well-dispersed, drug-encapsulated round shaped vesicles, with their size correlating that of DLS measurements (**Figure 1C**).

Immediately after the completion of the intravenous infusion of Caelyx® (that lasted for approximately 90 mins), blood (~10ml) was collected and plasma was prepared without delay by centrifugation. A two-step purification protocol (size exclusion chromatography and membrane ultrafiltration) was then employed for the isolation of liposome-corona complexes and the complete elimination of unbound proteins, as we have previously described (**Figure S1**).<sup>[4, 5]</sup> It should be noted that although the protein corona is often described as a multi-layered structure consisting of an inner layer of tightly bound proteins ('hard corona') and an outer dynamically-bound layer of proteins ('soft corona'), current purification protocols might disturb loosely bound biomolecules. Therefore, the existence and the biological relevance of the 'soft corona' remain unclear and we can only refer to the analytically accessible protein corona.<sup>[18]</sup>

Dynamic light scattering measurements of corona-coated liposomes demonstrated that their size distribution broadened (**Figure 1B**). Formation of the corona is often associated with an increase in the mean nanoparticle diameter since layers of proteins are adhered onto the NP surface. In the case of soft nanomaterials however, adsorption of proteins could also lead to a reduction in their mean diameter due to osmotic "shrinkage". This has been previously reported<sup>[4, 5, 19]</sup> and also observed here in the case of human *in vivo* and *ex vivo* corona-coated liposomes (**Figures 1B and S2**). In addition, our data showed that the mean surface charge of liposomes remained negative after their interaction with plasma proteins (**Figure 1B and S2**) in agreement with previous studies proposing that negatively charged NPs do not exclusively interact with

1  
2  
3  
4 positively charged proteins, as electrostatic interactions are not the only driving force at the NP–  
5 protein interface.<sup>[20]</sup>  
6

7 Moreover, TEM imaging revealed well dispersed and corona-coated liposomes that retained  
8 an intact structure after recovery and purification (**Figure 1C**). Although protein corona is usually  
9 illustrated as a dense layer covering the entire surface of a nanoparticle, this has not been  
10 experimentally confirmed. In agreement with our previously reported observations in rodents,<sup>[4, 5]</sup>  
11 the human *in vivo* protein corona did not appear to coat entirely the liposome surface. Cryo-EM  
12 imaging of the recovered liposomes further confirmed the presence of a protein corona adsorbing  
13 around the doxorubicin-encapsulated (Caelyx®) liposomes, but without fully covering their surface  
14 (**Figure 1C**). Similarly, Kokkinopoulou M *et al.*, have recently described the protein corona formed  
15 around polystyrene NPs as an undefined and unfolded network surrounding the NP surface.<sup>[21]</sup>  
16 Moreover, small vesicular structures surrounding the liposome surface could be observed by TEM  
17 in **Figure 1C**. We hypothesize that these could be either osmotically shrunk liposomes or blood-  
18 circulating extracellular vesicles adsorbed onto the surface of liposomes. Based on these  
19 observations, further studies will be needed to explore the adherence of other molecules or  
20 vesicular structures onto the surface of blood-circulating NPs.  
21  
22

23  
24 **Characterization of the human *in vivo* protein corona.** Previous anti-opsonisation studies have  
25 emphasized that the total amount of protein adhered onto NPs can be used to predict the NPs  
26 blood circulation time.<sup>[22-24]</sup> Even though the overall protein adsorption is moderated by the PEG  
27 chains present onto the NPs surface, it cannot be fully suppressed.<sup>[3-5]</sup> In agreement with these  
28 previous findings, the present study demonstrated that PEGylated nanoscale surfaces are not  
29 entirely inert and interact with plasma proteins upon intravenous administration in humans.  
30  
31

32 To investigate the total amount of protein adsorbed, we calculated the protein binding ability  
33 (Pb), defined as the amount of protein associated with each µmole of lipid. As shown in **Figure 2A**,  
34 the average Pb value observed was 1532 µg of protein/ µmole of lipid, that is more than 10 times  
35 higher than what was obtained for the same liposome composition (produced in the laboratory)  
36 after injection in healthy CD-1 mice.<sup>[5]</sup> Whether this is a result of mouse-to-human differences  
37 and/or due to the neoplastic disease present at an advanced stage in the patients that participated  
38 in this study, is difficult to conclude and will require further investigation. *Ex vivo* incubations of  
39 Caelyx® liposomes with plasma samples, obtained from the same patients before Caelyx® infusion  
40 were performed as a control. As shown in **Figure S3**, a significantly lower average Pb value was  
41 observed which confirms our previous data suggesting that the *ex vivo* incubation of NPs with  
42

1  
2  
3  
4 human plasma samples cannot predict the formation of protein corona under realistic *in vivo*  
5 conditions.<sup>[4]</sup>

6  
7 The manner in which proteins adsorb and pack onto the NP surface is highly dependent on  
8 their physicochemical properties and especially their size, shape and functionalization. However,  
9 concrete relationships between the nanomaterial synthetic identity and their ensuing biological  
10 identity in physiological environments remain vague and unpredictable.<sup>[1]</sup> Distinct proteins could be  
11 either enriched or displayed weak affinity for the NP surface depending on the balance between  
12 their rates of association ( $K_{on}$ ) and dissociation ( $K_{off}$ ).<sup>[25]</sup> It has previously been shown by us *in vivo*  
13<sup>[5]</sup> and others *in vitro*<sup>[26, 27]</sup> that the protein corona is a temporally dynamic entity. In complex  
14 biofluids, such as blood, proteins present at high concentrations are characterized by high  $K_{on}$   
15 values and therefore have high possibility to interact with the surface of NPs. However, these  
16 proteins might be replaced by other molecules of lower abundance, but of higher binding energy  
17 (characterized by low  $K_{off}$  values). Our previous time evolution studies in rodents revealed that a  
18 molecularly rich *in vivo* protein corona was formed around PEGylated liposomal doxorubicin  
19 (Caelyx®) as early as 10min post-injection. Even though the total amount of protein adsorbed and  
20 the identity of the corona proteins did not significantly change, the abundance of each protein  
21 fluctuated over time, indicating that competitive exchange processes were taking place.  
22 Interestingly, liposomes were coated by a complex mixture of low MW proteins at all different time  
23 points of investigation.<sup>[5]</sup>

24 To examine whether our previous observation in rodents applies also under the *in vivo*  
25 conditions in humans, we comprehensively identified the protein molecules that self-assembled to  
26 form the corona around the intravenously infused liposomes by mass spectrometry. Surface-bound  
27 proteins were classified according to their molecular weight. As illustrated in **Figure 2B**, plasma  
28 proteins with MW < 80 accounted for almost 80% of the protein coronas formed. It is possible that  
29 the low MW proteins identified (**Figure 2B**) have high affinity and interact directly with the surface  
30 of PEGylated liposomes and/or they are trapped between other corona-carrier proteins that are  
31 adhered to the NPs surface.

32 To further understand the protein composition of the *in vivo* human corona, the average  
33 value (n=6 patients) of relative protein abundance (RPA) for each identified protein was calculated.  
34 **Figure 2C** summarizes the 20 most abundant proteins associated onto the surface of recovered  
35 Caelyx® liposomes for all patients. The most abundant corona protein was full-length cDNA clone  
36 CS0DD006YL02 (with accession number Q86TT1; SwissProt database). **To the best of our**  
37 **knowledge, this protein has not been previously reported to associate with the surface of liposomes**  
38 **or any other type of nanoparticle after their incubation in full plasma.** It has been only previously

1  
2  
3  
4 shown to interact with maltose-functionalized PEGylated hybrid magnetic NPs after their incubation  
5 with fractionated human plasma sample.<sup>[28]</sup> The 20 most abundant proteins identified in each  
6 patient and their respective RPA values are also shown in **Table S2** to further illustrate the  
7 consistency of the above observation. The fact that the most abundant corona proteins were  
8 common between the 6 patients illustrates the consistency of liposome-protein interactions. Out of  
9 445 corona proteins identified, 122 were repeatedly detected in all patients (**Figure S4** and **Table**  
10 **S5**).  
11  
12

13 In agreement with our previous investigations of the liposomal protein coronas in mice,<sup>[5]</sup>  
14 immunoglobulins, lipoproteins and complement proteins were the most abundant classes of  
15 proteins, contributing to 28%, 9% and 4% of the total protein content respectively (**Figure 2D** and  
16 **Tables S2-S3**). The presence of opsonins (such as immunoglobulins), known to activate the  
17 mononuclear phagocytic system (MPS), can favor recognition and clearance of the blood-  
18 circulating PEGylated liposomes used in this study. However, the PEG-mediated inhibition of  
19 interactions between nanoparticles and circulating blood cells has been proposed to explain their  
20 long circulation time.<sup>[29]</sup> As the molecular identification of the human corona suggests, lipoproteins  
21 were the second most abundant class of proteins, proposed to have dysopsonic activity (i.e. favor  
22 long blood circulation), possibly via competitive binding for the liposomal surface with opsonic  
23 proteins.<sup>[30]</sup> The high affinity and adherence of lipoproteins to the lipid surface of Caelyx® NPs  
24 observed, was not surprising considering that blood circulating lipoproteins are involved in lipid and  
25 cholesterol transport and metabolism.  
26  
27

28 Intravenously infused, doxorubicin-encapsulated PEGylated liposomes have also been  
29 shown to interact with the complement system, in some cases triggering a transient and mostly  
30 mild hypersensitive reactions known as C-activation related pseudoallergy (CARPA).<sup>[31, 32]</sup> Despite  
31 the presence of several key complement cascade proteins in the liposomal corona involved in the  
32 classical (complement C1s and C1qb, C4b binding protein) alternative (complement factor h,  
33 complement C3) and in lectin (mannan-binding lectin serine protease) pathways of activation  
34 (**Figure 2D** and **Table S3**), none of the patients in our study experienced a clinically symptomatic  
35 reaction to Caelyx® infusion.  
36  
37

38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53 **Patient-by-patient blood-circulation proteome analysis.** Blood predominantly contains high  
54 abundance, high MW proteins, such as albumin and immunoglobulins, that hamper the detection of  
55 the lower MW blood proteomic fractions.<sup>[33]</sup> There is an urgent need for tools to facilitate the  
56 discovery of new and, more importantly, combinations of protein molecule panels to improve early  
57 cancer diagnosis, evaluate disease progression and monitor response to the treatment. Robust  
58  
59  
60  
61  
62  
63  
64  
65

high-throughput proteomic discovery platforms that will enable the identification of blood-buried molecules are of immediate clinical importance.

The fact that albumin ‘masking’ was largely eliminated from the *in vivo* human-derived corona prompted us to investigate further whether liposomes interacted with plasma proteins that could not be directly detected by plasma proteomic analysis. Proteins associated with liposomes *in vivo* were separated by SDS-PAGE and visualized by Imperial Protein stain, as illustrated in **Figure 3A**. Contrary to plasma control, the distinct bands of corona proteins, even at the low MW region, confirmed the ability of liposomes to surface-capture low abundant proteins minimizing the ‘noise’ from highly abundant proteins (**Figure 3A**).

Low molecular weight proteins are easily cleared from blood circulation (mainly through proteolytic plasma clearance), which limits their detection by conventional plasma proteomic analysis.<sup>[34-36]</sup> The only way a small molecule can remain in the blood circulation for longer periods is to adhere to a long-circulating high abundance protein, such as albumin.<sup>[35, 36]</sup> The adherence of smaller MW biomolecules onto the surface of NPs once injected in the bloodstream, could significantly increase their blood circulation and allow their successful ‘enrichment’ for detection. Therefore, the characterization of the purified corona proteins can be employed as a ‘fractionation’ plasma tool that addresses the signal-to-noise challenge.

The nanoparticle-mediated capture of low MW proteins from biofluids has been so far attempted exclusively *ex vivo*. For instance, Nanotrap® technology developed by Liotta and co-workers, uses core shell hydrogel nanoparticles as protein harvesters. This technology is based on the NP-mediated size and charge dependent fractionation of complex biofluids, such as plasma and urine, prior to proteomic analysis. The porous outer shell of NIPAm (N-isopropylacrylamide) NPs blocks the entry of high MW proteins, while the internal core contains covalently attached chemical affinity baits which capture low MW proteins.<sup>[37, 38]</sup>

To compare the human corona proteins with the plasma proteome, we analyzed plasma samples obtained from the same patients before the infusion of Caelyx®. The Venn diagram in **Figure 3B** illustrates the number of common and unique proteins between the liposomal corona and plasma, as identified by mass spectrometry. A significantly higher total number of proteins was detected in the corona samples in comparison to the number of proteins identified when plasma samples were analyzed (**Figure 3B**). In addition, the most abundant plasma proteins were not the predominant corona proteins, as depicted in **Figure 3C** and **Tables S3** and **S4**. Strikingly, the most abundant corona protein (full-length cDNA clone, CS0DD006YL02), which contributed to 8% of the total protein content, was not detected in any of the plasma control samples (**Figure 3C** and **Table S4**). Although, full-length cDNA clone CS0DD006YL02 has been previously identified by mass

1  
2  
3  
4 spectrometry analysis of arachnoid cyst fluid,<sup>[39]</sup> peritoneal effluent<sup>[40]</sup> and saliva<sup>[41]</sup>, current  
5 proteomic approaches fail to detect this low abundant protein in complex mixtures like plasma.  
6

7       The above findings prompted us to further investigate the molecular composition of the ex  
8       vivo protein corona after the incubation of Caelyx® liposomes with plasma samples obtained from  
9       the same ovarian carcinoma patients before Caelyx® infusion. In agreement with our previous data  
10      in rodents, a more complex molecular fingerprint was detected for the *in vivo* protein corona in  
11      comparison to its counterpart *ex vivo* corona (**Figure S5**). Despite the fact that the cDNA clone  
12      CS0DD006YL02 protein was not detected by mass spectrometry in any of the control plasma  
13      samples, it was identified as the most abundant protein of both the *in vivo* and *ex vivo* formed  
14      protein coronas (**Figure 2A** and **Table S6**). Control investigations of the *ex vivo* corona formed  
15      onto Caelyx® liposomes upon incubation with plasma samples from healthy volunteers (**Table S6**)  
16      were also performed. The cDNA clone CS0DD006YL02 protein was found to be the 5<sup>th</sup> most  
17      abundant protein in the control cohort suggesting that tumorigenesis may affect the dynamics of  
18      corona formation. Overall, the above data provide an initial evidence that the liposome protein  
19      corona results in an ‘enriched’ sampling of the blood proteome which renders the need for much  
20      more work on the biomarker discovery front necessary, but beyond the scope of this study.  
21

22       Previously unreported experimental evidence that a biomolecule corona self-assembles  
23      around nanoparticles in humans while in their blood circulation has been offered in the present  
24      study. The successful recovery and purification of corona-coated lipid bilayer vesicles from the  
25      blood circulation of ovarian carcinoma patients allowed the proteomic analysis of the human *in vivo*  
26      protein corona. We demonstrated that the clinically-used liposomal nanoparticles interact and can  
27      be stably coated with a complex mixture of plasma proteins, including low MW and low-abundant  
28      molecules otherwise ‘masked’ under the overwhelming signal of highly abundant proteins (such as  
29      albumin and immunoglobulins). The corona-based elimination of this ‘masking’ effect, enabled the  
30      uncovering of multiple protein molecules that could not be detected by plasma sample analysis  
31      performed in comparison. This work is thought to act as the impetus for many future studies needed  
32      to improve our further understanding of how the human *in vivo* biomolecule corona can affect the  
33      overall clinical performance of NPs, but also provide the technology springboard to allow the clinical  
34      exploitation of protein corona fingerprinting as a novel tool to comprehensively analyze the blood  
35      circulation proteome  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53

## Experimental

**Ethical Approvals.** This project was reviewed and approved by the Manchester Cancer Research Centre Biobank Sample Access Committee and all sample collection was conducted under the MCRC Biobank Research Tissue Bank Ethics (ref: 07/H1003/161+5).

**Blood sample collection.** Caelyx® is indicated for the treatment of advanced ovarian cancer in women who have failed a first-line platinum-based chemotherapy. Patients receive in total 6 cycles of Caelyx with cycle frequency 28 days. Eligible cases for this study included women with recurrent ovarian cancer commencing single agent Caelyx® for the first time, at a dose of 40 mg/m<sup>2</sup>. Caelyx® contains 2mg/ml doxorubicin hydrochloride encapsulated in a PEGylated liposomal formulation (16 mg lipid content). Based on established pharmacokinetic data for the clinically-used PEGylated liposomes encapsulating doxorubicin, the time of blood collection (after the completion of infusion that lasted for approximately 90 mins), the majority of injected liposomal nanoparticles are still in blood circulation.<sup>[14, 42]</sup>

Paired plasma samples (before and immediately after cycle 1 infusion) were collected into commercially available anticoagulant-treated tubes (K2 EDTA BD Vacutainer®). Plasma was then prepared by inverting 10 times the collection tubes to ensure mixing of blood with EDTA and subsequent centrifugation for 12 minutes at 1300 RCF at 4 °C. Following centrifugation supernatant was immediately collected into labelled Protein LoBind Eppendorf Tubes and samples were maintained on ice while handling.

**Separation of corona-coated liposomes from unbound and weakly bound proteins.** Corona-coated liposomes were separated from excess plasma proteins by size exclusion chromatography followed by membrane ultrafiltration as we have previously described.<sup>[4, 5]</sup>

**Ex vivo protein corona formation.** To investigate the ex vivo protein corona, Caelyx® liposomes were incubated with plasma samples obtained from the same 6 patients prior to Caelyx® infusion and from healthy donors. Considering the impact of the anti-coagulant agent on the formation of protein corona,<sup>[43]</sup> the same protocol was followed for the preparation of plasma samples, as described above for the *in vivo* experiment (K2 EDTA BD Vacutainer® tubes, centrifugation for 12 minutes at 1300 RCF at 4 °C). The ex vivo protein corona was allowed to form using the same liposome concentration (0.15 mM) as that extracted in 1 mL of plasma from intravenously injected patients. Liposomes were incubated with plasma for 90 min at 37°C in orbital shaker at 250 rpm. The purification of the ex vivo corona-coated liposomes was performed as described above for the *in vivo* recovered liposomes.

**Size and zeta potential measurements using dynamic light scattering (DLS).** Liposome size and surface charge were measured using Zetasizer Nano ZS (Malvern, Instruments, UK).

**Transmission Electron Microscopy (TEM).** Liposomes were stained by uranyl acetate solution 1% and visualized with transmission electron microscopy (FEI Tecnai 12 BioTwin) before and after their *in vivo* interaction with plasma proteins. Samples were diluted to 0.5 mM lipid concentration and carbon Film Mesh Copper Grids (CF400-Cu, Electron Microscopy Science) were used.

**Cryo-electron Microscopy.** EM grids of liposomes were prepared in a FEI Vitrobot using 3µL of sample absorbed to freshly glow-discharged R 3.5/1 Quantifoil grids. Grids were blotted for 4-5 s in a 95% humidity chamber before plunge freezing in to liquid ethane. Data were imaged on a Tecnai T20 (FEI) electron microscope operating at 200 keV with a Gatan 626 cryo stage. Images were recorded on a 4K Gatan Ultrascan CCD camera under low-dose conditions between 0.5 and 2.0 µm defocus and at 3.8 Å/pixel and had a maximum electron dose of <25 electrons/Å<sup>2</sup>.

**SDS-PAGE electrophoresis.** Proteins associated with 0.025 µM of liposomes were loaded onto a 4-20% NOVEX Tris-Glycine Protein Gel (ThermoFisher Scientific). The gel was run until the proteins neared the end of the gel (25-40 minutes at 225V). Staining was performed with Imperial Gel Staining reagent (Sigma Life Science).

1  
2  
3  
4     **Quantification of adsorbed proteins.** Proteins associated with recovered liposomes were quantified by  
5     BCA Protein assay kit according to manufacturer's instructions. To make sure that liposomes in solution do  
6     not interfere with the absorbance at 562 nm we measured the absorbance of corona-coated liposomes in  
7     HBS buffer and subtract it from the total absorbance, measured when corona-coated liposomes were mixed  
8     with the BCA reagent. Lipid concentration was quantified by Stewart assay and Pb values ( $\mu$ g of protein/ $\mu$ M  
9     lipid) were then calculated.  
10

11     **Mass Spectrometry.** In-gel digestion of corona (40ug) and plasma (5ul) proteins was performed prior to LC-  
12     MS/MS analysis, as we have previously described.<sup>[4-6]</sup> Digested samples were analysed by LC-MS/MS using  
13     an UltiMate® 3000 Rapid Separation LC (RSLC, Dionex Corporation, Sunnyvale, CA) coupled to a Q  
14     Exactive™ Hybrid Quadrupole-Orbitrap™ (Thermo Fisher Scientific, Waltham, MA) mass spectrometer. Data  
15     produced were searched using Mascot (Matrix Science UK), against the SwissProt\_2016\_04 database with  
16     taxonomy of [human] selected.  
17

18     The Scaffold software (version 4.3.2, Proteome Software Inc.) was used for relative protein quantification  
19     based on spectral counting. Protein identifications were accepted if they could be established at greater than  
20     99.0% probability and contained at least 2 identified peptides. Semi quantitative assessment of the protein  
21     amounts was conducted using normalized spectral countings as previously described.<sup>[4-6]</sup> Heatmaps of  
22     Relative Protein Abundance (RPA) values were prepared using Plotly 2.0 software.  
23

24     **Statistical analysis.** Statistical analysis of the data was performed using GraphPad Prism software. One-  
25     way analysis of variance (ANOVA) was used and p values <0.05 were considered significant.  
26  
27  
28

## 29     **Data availability**

30     The authors declare that all relevant data supporting the findings of this study are available within the paper  
31     and its supplementary information files.  
32

## 33     **Author contributions**

34     M.H. initiated, designed and performed the experiments, analyzed all data and took responsibility for  
35     planning and writing the manuscript. S. McA., G.G and C.T. aided in the collection of blood samples. D.K.  
36     performed the Mass Spectrometry experiments. I.J.R. and A.C. contributed to the clinical design, provided  
37     oversight of the ethical approval process and were responsible for access and storage of the samples in the  
38     MCRC Biobank. Z.A-A and M.M provided intellectual input and experimental guidance at the initial stages of  
39     the study. K. K. initiated, designed, directed, provided intellectual input throughout the study and contributed  
40     to the writing of the manuscript.  
41  
42

## 43     **Acknowledgements**

44     This research was partially funded by the Marie Curie Initial Training Network PathChooser (PITN-GA-2013-  
45     608373). Authors wish to acknowledge Manchester Cancer Research (MCRC) Biobank team (Moghadam  
46     Sharzad, Bromley Kevin, Basia Hunt) for their assistance in the collection of blood samples. The authors also  
47     would like to thank the Faculty of Life Sciences EM Facility at the University of Manchester and Dr. Marc C.  
48     A. Stuart from University of Groningen for their assistance in Electron Microscopy imaging. In addition, Mass  
49     Spectrometry Facility staff at the University of Manchester for their support. We would also like to thank the  
50     patients for their kind donation of blood samples to support this research.  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65

## References

- [1] M. Hadjidemetriou, K. Kostarelos, *Nat Nanotechnol* **2017**, 12, 288.
- [2] T. Cedervall, I. Lynch, S. Lindman, T. Berggard, E. Thulin, H. Nilsson, K. A. Dawson, S. Linse, *Proc Natl Acad Sci U S A* **2007**, 104, 2050.
- [3] S. Schottler, G. Becker, S. Winzen, T. Steinbach, K. Mohr, K. Landfester, V. Mailander, F. R. Wurm, *Nat Nanotechnol* **2016**, 11, 372.
- [4] M. Hadjidemetriou, Z. Al-Ahmady, M. Mazza, R. F. Collins, K. Dawson, K. Kostarelos, *ACS Nano* **2015**, 9, 8142.
- [5] M. Hadjidemetriou, Z. Al-Ahmady, K. Kostarelos, *Nanoscale* **2016**, 8, 6948.
- [6] Z. S. Al-Ahmady, M. Hadjidemetriou, J. Gubbins, K. Kostarelos, *Journal of Controlled Release* **2018**, 276, 157.
- [7] R. Garcia-Alvarez, M. Hadjidemetriou, A. Sanchez-Iglesias, L. M. Liz-Marzan, K. Kostarelos, *Nanoscale* **2018**.
- [8] D. Westmeier, D. Solouk-Saran, C. Vallet, S. Siemer, D. Docter, H. Gotz, L. Mann, A. Hasenberg, A. Hahlbrock, K. Erler, C. Reinhardt, O. Schilling, S. Becker, M. Gunzer, M. Hasenberg, S. K. Knauer, R. H. Stauber, *Proc Natl Acad Sci U S A* **2018**, 115, 7087.
- [9] A. Salvati, A. S. Pitek, M. P. Monopoli, K. Prapainop, F. B. Bombelli, D. R. Hristov, P. M. Kelly, C. Aberg, E. Mahon, K. A. Dawson, *Nat. Nanotechnol.* **2013**, 8, 137.
- [10] D. Westmeier, R. H. Stauber, D. Docter, *Toxicol Appl Pharmacol* **2016**, 299, 53.
- [11] T. M. Allen, P. R. Cullis, *Adv Drug Deliv Rev* **2013**, 65, 36.
- [12] Y. Barenholz, *J Control Release* **2012**, 160, 117.
- [13] T. Safra, F. Muggia, S. Jeffers, D. D. Tsao-Wei, S. Groshen, O. Lyass, R. Henderson, G. Berry, A. Gabizon, *Annals of Oncology* **2000**, 11, 1029.
- [14] A. Gabizon, H. Shmeeda, Y. Barenholz, *Clin Pharmacokinet* **2003**, 42, 419.
- [15] U. Sakulkhu, L. Maurizi, M. Mahmoudi, M. Motazacker, M. Vries, A. Gramoun, M. G. Ollivier Beuzelin, J. P. Vallee, F. Rezaee, H. Hofmann, *Nanoscale* **2014**, 6, 11439.
- [16] G. Caracciolo, D. Pozzi, A. L. Capriotti, C. Cavaliere, S. Piovesana, G. La Barbera, A. Amici, A. Lagana, *J Mater Chem B* **2014**, 2, 7419.
- [17] S. Wilhelm, A. J. Tavares, Q. Dai, S. Ohta, J. Audet, H. F. Dvorak, W. C. W. Chan, *Nat Rev Mater* **2016**, 1.
- [18] D. Docter, D. Westmeier, M. Markiewicz, S. Stolte, S. K. Knauer, R. H. Stauber, *Chem Soc Rev* **2015**, 44, 6094.
- [19] J. Wolfram, K. Suri, Y. Yang, J. Shen, C. Celia, M. Fresta, Y. Zhao, H. Shen, M. Ferrari, *Colloids Surf B Biointerfaces* **2014**, 114, 294.
- [20] S. Tenzer, D. Docter, J. Kuharev, A. Musyanovych, V. Fetz, R. Hecht, F. Schlenk, D. Fischer, K. Kiouptsi, C. Reinhardt, K. Landfester, H. Schild, M. Maskos, S. K. Knauer, R. H. Stauber, *Nat Nanotechnol* **2013**, 8, 772.
- [21] M. Kokkinopoulou, J. Simon, K. Landfester, V. Mailander, I. Lieberwirth, *Nanoscale* **2017**, 9, 8858.
- [22] A. Chonn, S. C. Semple, P. R. Cullis, *J Biol Chem.* **1992**, 267, 18759.
- [23] A. Chonn, S. C. Semple, P. R. Cullis, *Biochim Biophys Acta* **1991**, 1070, 215.
- [24] S. C. Semple, A. Chonn, P. R. Cullis, *Biochemistry* **1996**, 35, 2521.
- [25] E. A. Vogler, *Biomaterials* **2012**, 33, 1201.
- [26] F. Chen, G. Wang, J. I. Griffin, B. Brenneman, N. K. Banda, V. M. Holers, D. S. Backos, L. Wu, S. M. Moghimi, D. Simberg, *Nat Nanotechnol* **2017**, 12, 387.
- [27] S. Tenzer, D. Docter, J. Kuharev, A. Musyanovych, V. Fetz, R. Hecht, F. Schlenk, D. Fischer, K. Kiouptsi, C. Reinhardt, K. Landfester, H. Schild, M. Maskos, S. K. Knauer, R. H. Stauber, *Nat. Nanotechnol.* **2013**, 8, 772.
- [28] Z. Xiong, L. Zhao, F. Wang, J. Zhu, H. Qin, R. Wu, W. Zhang, H. Zou, *Chem Commun (Camb)* **2012**, 48, 8138.
- [29] S. Mishra, P. Webster, M. E. Davis, *Eur J Cell Biol* **2004**, 83, 97.
- [30] N. Bertrand, P. Grenier, M. Mahmoudi, E. M. Lima, E. A. Appel, F. Dormont, J. M. Lim, R. Karnik, R. Langer, O. C. Farokhzad, *Nat Commun* **2017**, 8, 777.
- [31] J. Szebeni, *Toxicology* **2005**, 216, 106.
- [32] A. Chanan-Khan, J. Szebeni, S. Savay, L. Liebes, N. M. Rafique, C. R. Alving, F. M. Muggia, *Ann Oncol* **2003**, 14, 1430.

- [33] R. Schiess, B. Wollscheid, R. Aebersold, *Mol Oncol* **2009**, 3, 33.
- [34] K. Merrell, K. Southwick, S. W. Graves, M. S. Esplin, N. E. Lewis, C. D. Thulin, *J Biomol Tech* **2004**, 15, 238.
- [35] T. Maack, V. Johnson, S. T. Kau, J. Figueiredo, D. Sigulem, *Kidney Int* **1979**, 16, 251.
- [36] Y. Vugmeyster, X. Xu, F. P. Theil, L. A. Khawli, M. W. Leach, *World J Biol Chem* **2012**, 3, 73.
- [37] A. Luchini, D. H. Geho, B. Bishop, D. Tran, C. Xia, R. L. Dufour, C. D. Jones, V. Espina, A. Patanarut, W. Zhou, M. M. Ross, A. Tessitore, E. F. Petricoin, 3rd, L. A. Liotta, *Nano Lett* **2008**, 8, 350.
- [38] D. Tamburro, C. Fredolini, V. Espina, T. A. Douglas, A. Ranganathan, L. Ilag, W. Zhou, P. Russo, B. H. Espina, G. Muto, E. F. Petricoin, 3rd, L. A. Liotta, A. Luchini, *J Am Chem Soc* **2011**, 133, 19178.
- [39] M. Berle, A. C. Kroksveen, O. A. Haaland, T. T. Aye, J. A. Opsahl, E. Oveland, K. Wester, R. J. Ulvik, C. A. Helland, F. S. Berven, *Fluids Barriers CNS* **2011**, 8, 19.
- [40] V. Zavvos, A. T. Buxton, C. Evans, M. Lambie, S. J. Davies, N. Topley, M. Wilkie, A. Summers, P. Brenchley, D. S. Goumenos, T. S. Johnson, *Kidney Int* **2017**, 92, 988.
- [41] Y. Wu, Y. H. Z. Feng, R. Shu, Y. Chen, Y. Feng, H. W. Liu, *International Journal of Clinical and Experimental Medicine* **2016**, 9, 15540.
- [42] A. Gabizon, R. Catane, B. Uziely, B. Kaufman, T. Safra, R. Cohen, F. Martin, A. Huang, Y. Barenholz, *Cancer Res* **1994**, 54, 987.
- [43] M. Lundqvist, C. Augustsson, M. Lilja, K. Lundkvist, B. Dahlback, S. Linse, T. Cedervall, *PLoS One* **2017**, 12, e0175871.

## FIGURE LEGENDS

**Figure 1: The effect of protein corona formation on the physicochemical characteristics and morphology of liposomes.** (A) Schematic description of the experimental design. PEGylated, doxorubicin-encapsulated liposomes (Caelyx®) were infused intravenously in patients with recurrent ovarian carcinoma and subsequently recovered from the blood circulation immediately on completion of their first-ever cycle of Caelyx® treatment. Corona coated liposomes were isolated from blood components and protein corona was quantitatively and qualitatively characterized; (B) Table shows the mean diameter (nm),  $\zeta$ -potential (mV) and polydispersity index (PDI) values of bare and corona-coated liposomes recovered from the blood circulation of 6 adenocarcinoma patients. Representative size and  $\zeta$ -potential distributions of corona-coated liposomes recovered from Patient 1 are also shown; (C) Negative stain TEM and Cryo-EM imaging of liposomes after their I.V injection and recovery from ovarian carcinoma patients. All scale bars are 100nm.

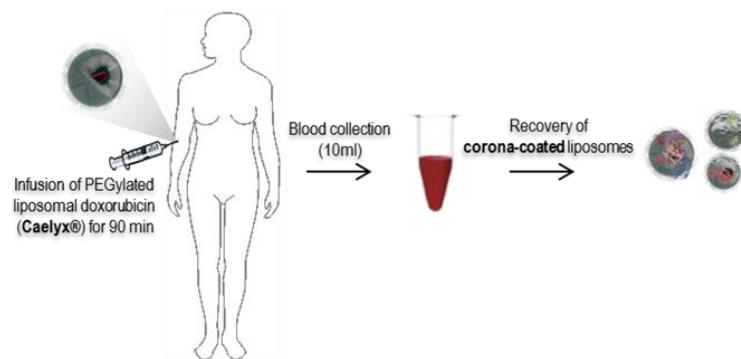
**Figure 2: Characterization of *in vivo* protein corona:** (A) The total amount of proteins adsorbed *in vivo* onto liposomes recovered from the blood circulation of ovarian carcinoma patients. Pb values ( $\mu\text{g}$  of protein/ $\mu\text{M}$  lipid) represent the mean and standard deviation from 6 patients; (B) Classification of the corona proteins identified according to their molecular mass; (C) Most-abundant proteins (top-20) identified in the protein corona of PEGylated doxorubicin-encapsulated liposomes by LC-MS/MS. Relative protein abundance (RPA) values represent the average and standard deviation from 6 ovarian carcinoma patients; (D) The relative percentage of immunoglobulins, lipoproteins and complement proteins identified in the protein corona. The percentage of relative protein abundance (%RPA) for each protein class represents the average from 6 ovarian carcinoma patients.

**Figure 3: Blood-circulation proteome analysis:** (A) Imperial stained SDS-PAGE gel of corona proteins associated with liposomes in the blood circulation of 6 ovarian carcinoma patients and plasma control; (B) Venn diagram reports the number of unique and common proteins between corona and plasma proteins and their respective overlaps as identified by LC-MS/MS. Proteins were identified in at least one of the six plasma and/or corona samples; (C) Heatmap of RPA (%) of corona and plasma proteins, as identified by LC-MS/MS. Only proteins with RPA>1% on at least one of the samples are shown. Protein-rows are sorted according to the RPA% values (from highest to lowest) of the first sample (plasma, patient 1). The full list of proteins identified and their respective accession numbers are shown in **Table S3** and **Table S4**.

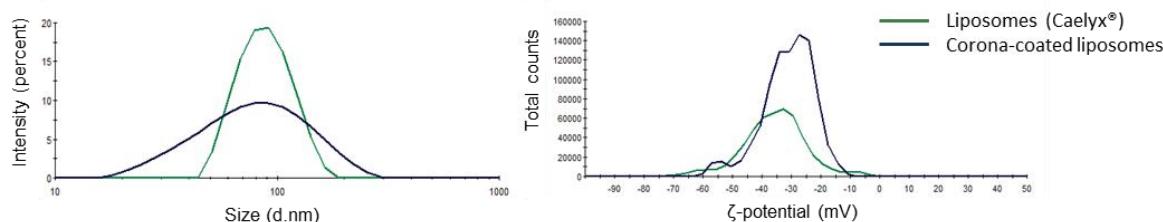
1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65

## FIGURE 1

A

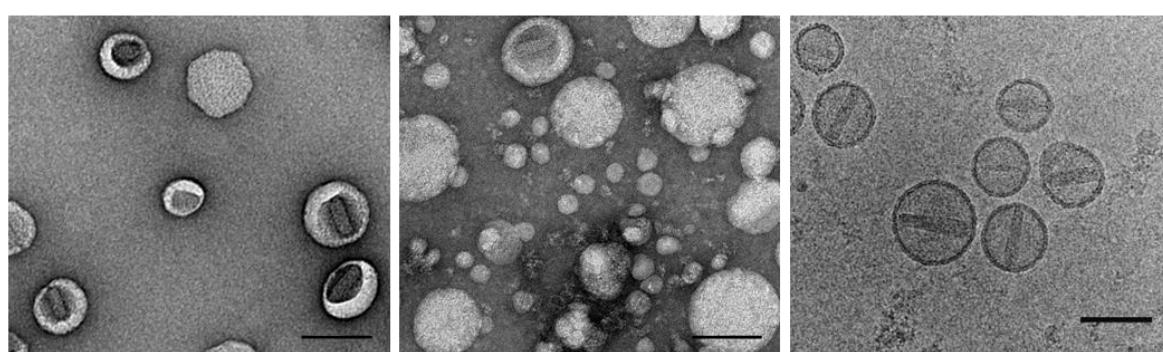


B



	Mean hydrodynamic diameter (nm)	$\zeta$ -potential (mV)	PDI
Liposomes-Caelyx® [HSPC/CHOL/mPEG2000-DSPE(56.2:38.5:5.3)]	82.63 ± 1.391	-33.8 ± 1.74	0.087 ± 0.023
Corona-coated liposomes (Patient1)	72.81 ± 1.120	-30.7 ± 1.87	0.275 ± 0.021
Corona-coated liposomes (Patient2)	89.56 ± 1.662	-36.2 ± 0.85	0.243 ± 0.011
Corona-coated liposomes (Patient3)	80.80 ± 0.782	-33.0 ± 2.04	0.234 ± 0.006
Corona-coated liposomes (Patient4)	86.95 ± 3.469	-37.5 ± 0.76	0.228 ± 0.008
Corona-coated liposomes (Patient5)	79.78 ± 0.550	-30.8 ± 0.06	0.274 ± 0.006
Corona-coated liposomes (Patient6)	98.28 ± 2.012	-39.8 ± 2.80	0.229 ± 0.002

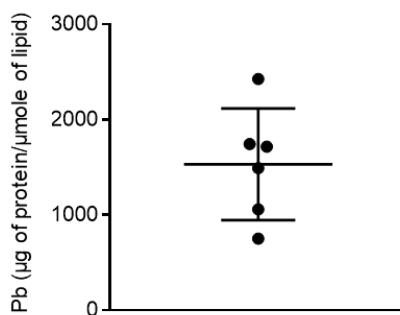
C



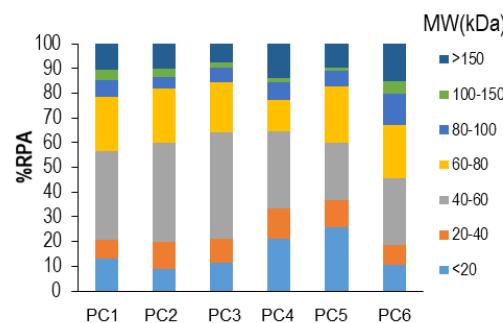
1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65

## FIGURE 2

A



B

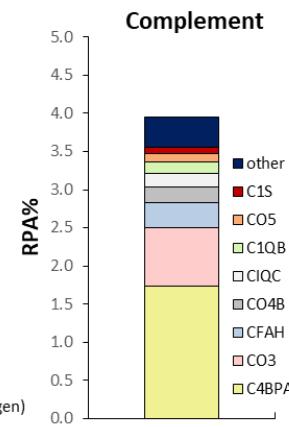
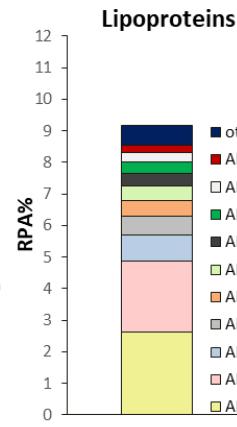
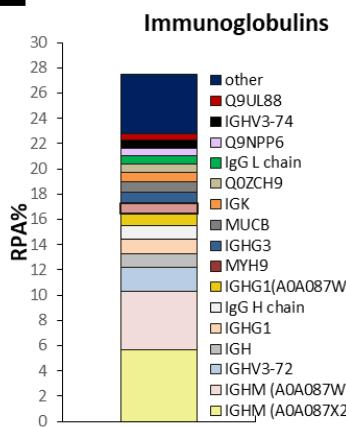


C

### TOP 20 IDENTIFIED PROTEINS

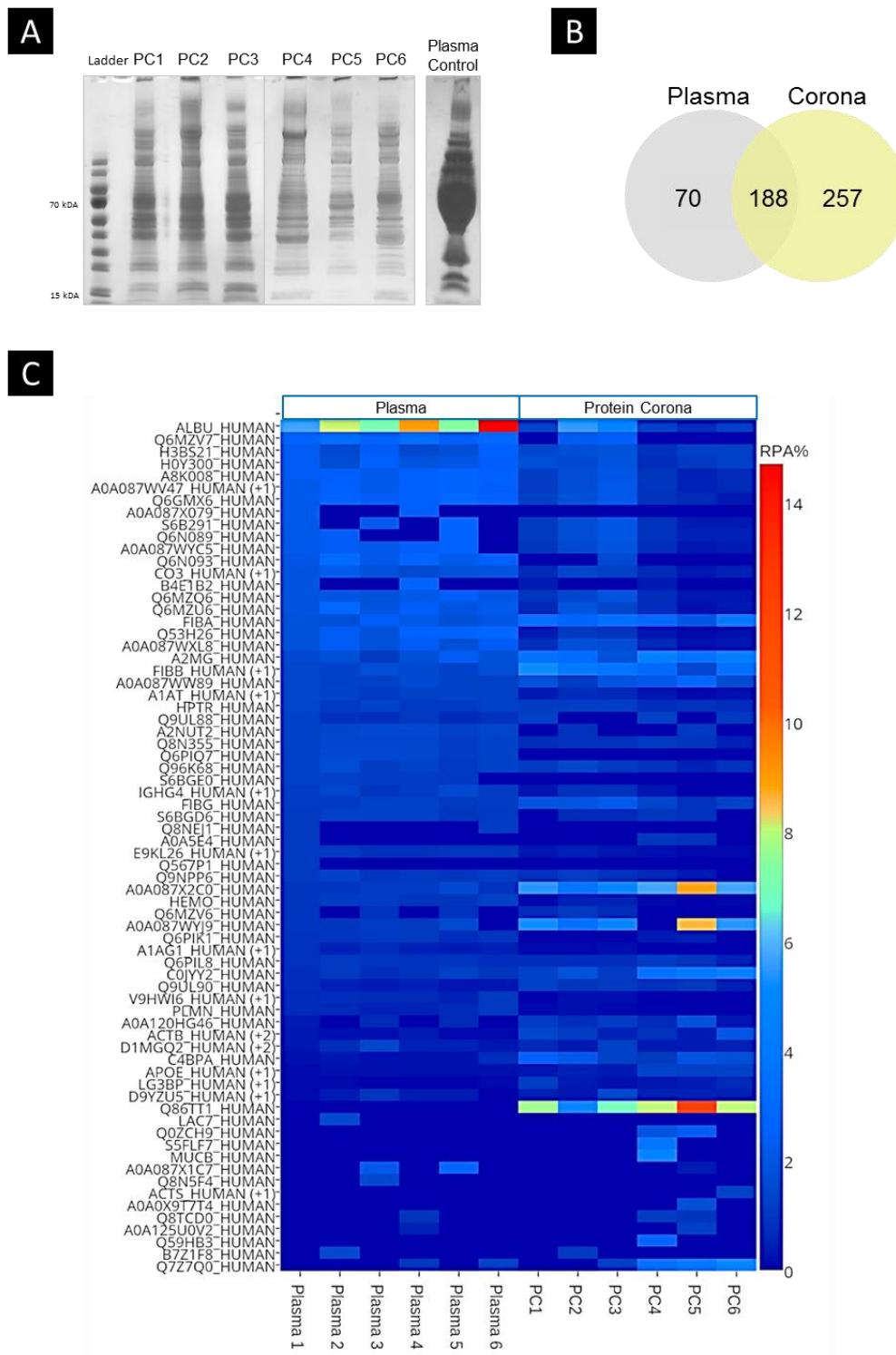
Protein	RPA%
Full-length cDNA clone CS0DD006YL02 of Homo sapiens (human)	7.99 ± 2.48
Ig mu chain C region (A0A087X2C0)	5.70 ± 1.81
Ig mu chain C region (A0A087WYJ9)	4.56 ± 2.83
Alpha-2-macroglobulin	3.48 ± 1.02
Fibrinogen beta chain	3.45 ± 1.19
Fibrinogen alpha chain	2.98 ± 0.67
Apolipoprotein B (Including Ag(X) antigen)	2.64 ± 1.44
Serum albumin	2.47 ± 2.06
APOB protein	2.22 ± 2.10
Protein IGHV3-72	1.91 ± 0.58
C4b-binding protein alpha chain	1.74 ± 0.59
Fibrinogen gamma chain	1.59 ± 0.53
Haptoglobin (Fragment)	1.35 ± 0.34
Haptoglobin	1.35 ± 0.43
IGH protein	1.14 ± 0.64
Ig gamma-1 chain C region	1.12 ± 0.59
Uncharacterized protein (A8K008)	1.11 ± 0.59
Uncharacterized protein (Q6N089)	1.05 ± 0.60
IgG H chain	1.04 ± 0.64
Actin, cytoplasmic 2	1.04 ± 0.60

D



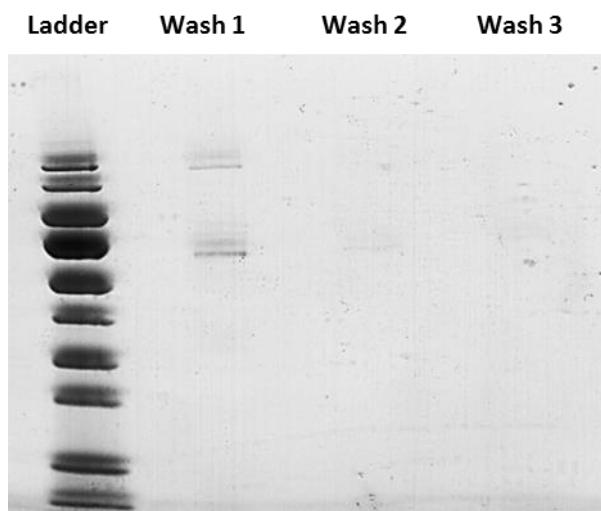
1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65

### FIGURE 3



# SUPPORTING INFORMATION

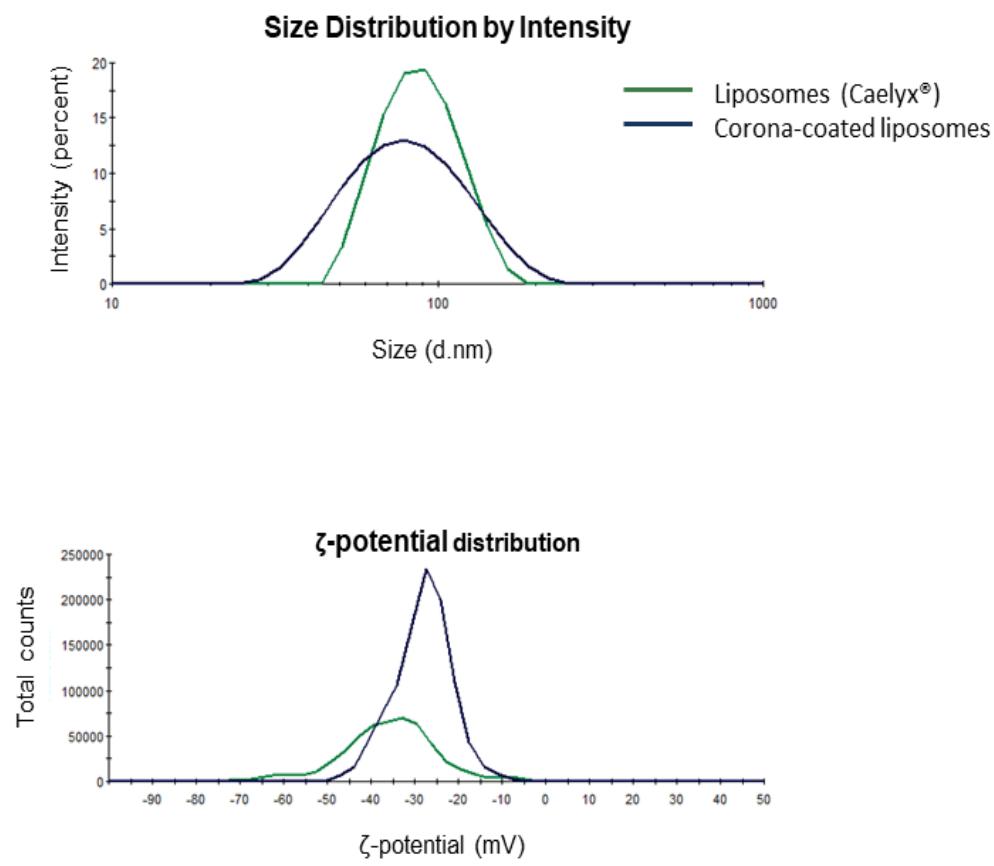
## Supporting Figure 1



**Figure S1: Separation of protein corona coated liposomes from unbound proteins.** Corona-coated liposomes were separated from excess plasma proteins by size exclusion chromatography followed by membrane ultrafiltration. Immediately after plasma preparation, plasma samples were loaded onto a Sepharose CL-4B (SIGMA-ALDRICH) column (15x1.5cm) equilibrated with HBS. Fractions containing liposomes (fractions 4,5&6) were then pooled together and concentrated to 500  $\mu$ l by centrifugation using Vivaspin 6 column (10000 MWCO, Sartorius, Fisher Scientific) at 3000rpm. Vivaspin 500 centrifugal concentrator (1 000 000 MWCO, Sartorius, Fisher Scientific) was then used at 3000 rpm, to further concentrate the samples to 100  $\mu$ l and to ensure separation of protein-coated nanoparticles from the remaining large unbound proteins. This procedure results in the filtration of unbound proteins while corona-coated liposomes because of their higher MW remain at the top of the membrane. Imperial stained SDS-PAGE shows that any remaining proteins in Chromatographic Fractions 4,5 and 6 were removed to the filtrate of Viva Spin (wash1) and no proteins remained at the top of the membrane (column residue). Column residue was washed 2 more time with HBS to ensure complete purification.

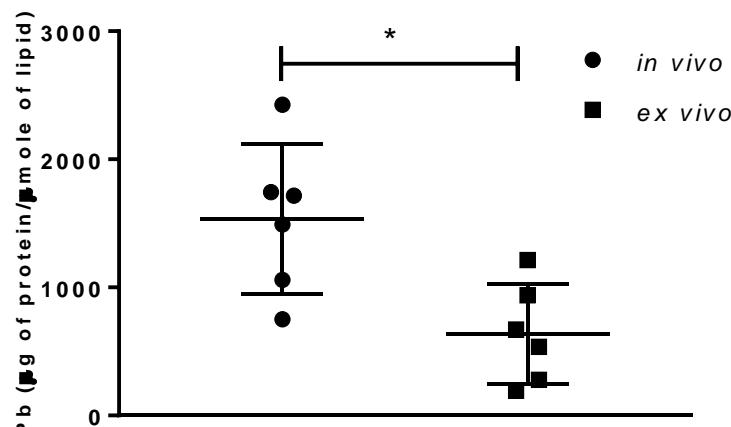
## Supporting Figure 2

<i>Ex vivo</i>	Mean hydrodynamic diameter (nm)	$\zeta$ -potential (mV)	PDI
Corona-coated liposomes (Patient1)	73.80±1.518	-32.1±3.50	0.161±0.005
Corona-coated liposomes (Patient2)	72.28±1.095	-30.2±2.97	0.227±0.006
Corona-coated liposomes (Patient3)	75.05±1.500	-37.2±1.80	0.149±0.005
Corona-coated liposomes (Patient4)	97.88±1.980	-27.8±3.91	0.244±0.015
Corona-coated liposomes (Patient5)	86.61±1.393	-28.7±0.40	0.238±0.006
Corona-coated liposomes (Patient6)	98.03±1.812	-40.9±2.51	0.237±0.007



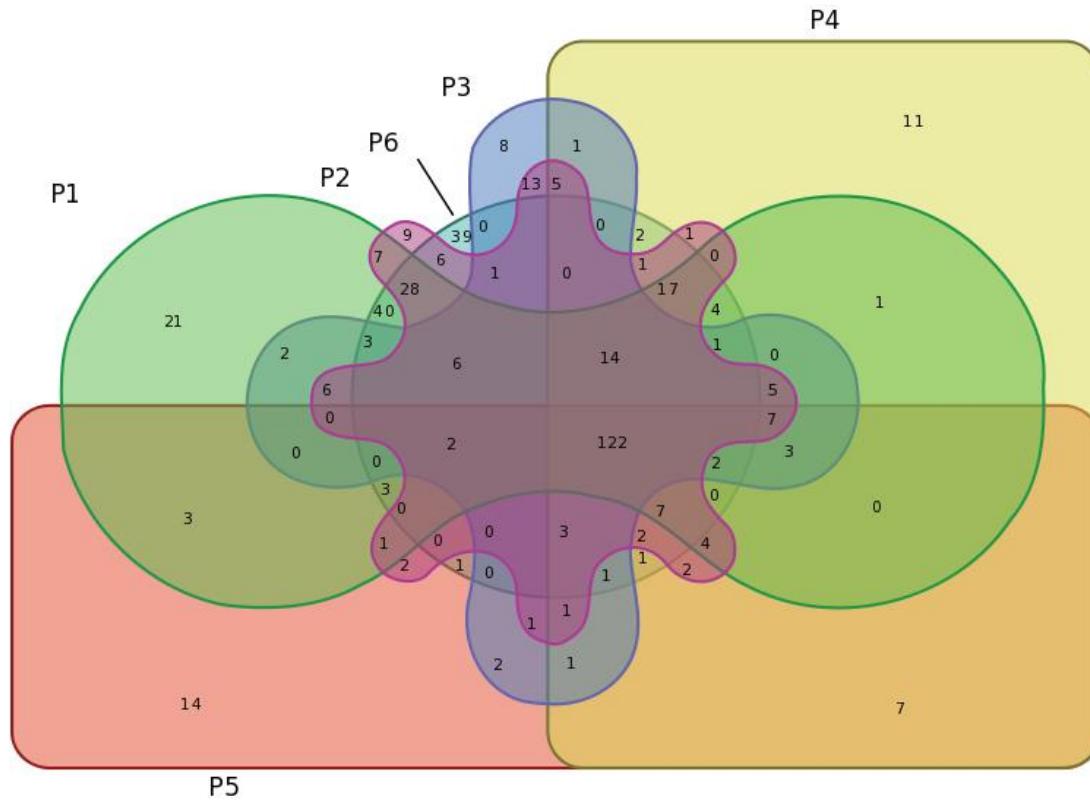
**Figure S2: The effect of the ex vivo formed protein corona on the physicochemical characteristics of liposomes.** Mean diameter (nm),  $\zeta$ -potential (mV) and polydispersity index (PDI) values and representative size and  $\zeta$ -potential distributions of bare and corona-coated liposomes incubated *ex vivo* with plasma samples obtained from 6 ovarian adenocarcinoma patient.

## Supporting Figure 3



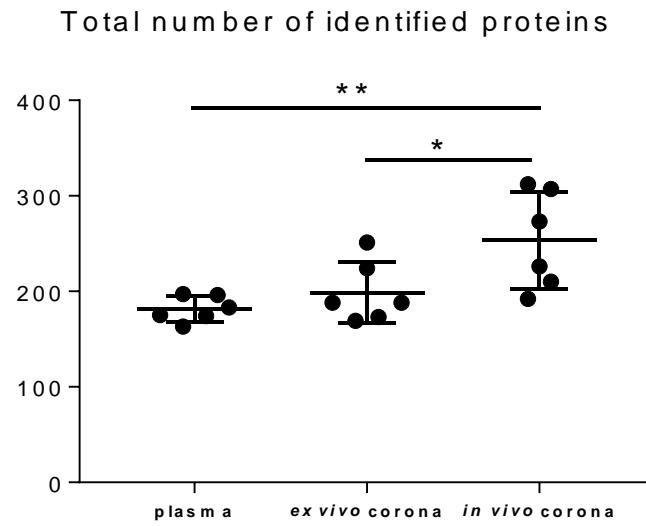
**Figure S3: Comparison of *in vivo* vs. *ex vivo* protein coronas.** The total amount of proteins adsorbed onto liposomes *in vivo* after recovery from the blood circulation of ovarian carcinoma patients and after their *ex vivo* incubation with plasma samples obtained from the same patients before the infusion of CaeLyx®. Pb values ( $\mu\text{g}$  of protein/ $\mu\text{M}$  lipid) represent the mean and standard deviation from 6 patients; \*\* indicates  $p < 0.01$  ( $p=0.0086$  ); \* indicates  $p < 0.05$  ( $p=0.0111$ ).

## Supporting Figure 4



**Figure S4: Characterisation of the *in vivo* protein corona:** Venn diagram reports the number of unique and common proteins between the liposomal coronas formed in 6 ovarian carcinoma patients and their respective overlaps as identified by LC-MS/MS. The full list of common proteins identified in the liposomal protein corona in all 6 ovarian carcinoma patients are shown in Tables S5.

## Supporting Figure 5



**Figure S5: Blood-circulation proteome analysis.** Total number of proteins identified by mass spectrometry analysis of plasma samples obtained from ovarian carcinoma patients and corona samples formed *ex vivo* and *in vivo*. Values represent the mean and standard deviation from 6 patients; \* indicates  $p<0.05$  ( $p=0.0459$ ) and \*\* indicates  $p<0.01$  ( $p=0.0087$ ).

## Supporting Table 1

**Table S1:** Patient cohort clinical and basic blood characteristics.

<b>Age (yrs)</b>	Median 71 (56-77)
<b>Prior lines of chemotherapy</b>	Median 2 (range 2-3)
<b>Histological subtype</b>	High grade serous carcinoma- 5 Moderately differentiated carcinoma NOS-1
<b>FIGO stage at diagnosis</b>	IIIC-5 IVA-1
<b>Baseline CA125 (at commencement of Caelyx) (U/ml)</b>	Median 665 (103-3081)
<b>Albumin (at commencement of Caelyx) (g/L)</b>	Median 41 (30-44)
<b>Total protein (at commencement of Caelyx) (g/L)</b>	Median 68 (56-72)

## Supporting Table 2

**Table S2: Most-abundant proteins (top-20) identified by LC-MS/MS in the protein corona of PEGylated liposomal doxorubicin, recovered from 6 different ovarian carcinoma patients.**

Patient 1		Patient 2	
Identified Proteins	RPA%	Identified Proteins	RPA%
1 Full-length cDNA clone CS0DD006YL02	7.68	Serum albumin	5.47
2 Ig mu chain C region(A0A087X2C0)	5.42	Full-length cDNA clone CS0DD006YL02	4.90
3 Ig mu chain C region(A0A087WYJ9)	5.17	Fibrinogen beta chain	3.95
4 Fibrinogen beta chain	5.17	Ig mu chain C region(A0A087X2C0)	3.53
5 Alpha-2-macroglobulin	3.49	Ig mu chain C region(A0A087WYJ9)	3.40
6 Fibrinogen alpha chain	3.25	Alpha-2-macroglobulin	3.12
7 C4b-binding protein alpha chain	2.55	Fibrinogen alpha chain	2.70
8 Fibrinogen gamma chain	1.92	Putative uncharacterized protein DKFZp686C11235	2.33
9 Protein IGHV3-72	1.84	C4b-binding protein alpha chain	2.10
10 Haptoglobin	1.65	Fibrinogen gamma chain	1.91
11 Haptoglobin (Fragment)	1.41	Putative uncharacterized protein DKFZp686C15213	1.90
12 Actin, cytoplasmic 2	1.40	Apolipoprotein B (Including Ag(X) antigen)	1.74
13 Serum albumin	1.36	Ig gamma-3 chain C region	1.69
14 Apolipoprotein B (Including Ag(X) antigen)	1.31	IGH protein	1.67
15 Myosin-reactive immunoglobulin heavy chain variable region	1.18	Haptoglobin (Fragment)	1.66
16 IGH protein	1.16	Ig gamma-1 chain C region	1.61
17 Myosin-reactive immunoglobulin heavy chain variable region (Fragment)	1.15	Uncharacterized protein (Q6N089)	1.57
18 GCT-A10 heavy chain variable region (Fragment)	1.14	IgG H chain	1.56
19 Uncharacterized protein (A8K008)	1.13	Uncharacterized protein(A8K008)	1.54
20 Lectin galactoside-binding soluble 3 binding protein isoform 1 (Fragment)	1.11	Haptoglobin	1.49

Patient 3		Patient 4	
Identified Proteins	RPA %	Identified Proteins	RPA %
1 Full-length cDNA clone CS0DD006YL02	6.91	Full-length cDNA clone CS0DD006YL02	7.99
2 Ig mu chain C region(A0A087X2C0)	4.81	Ig mu chain C region(A0A087X2C0)	5.69
3 Serum albumin	4.72	Ig mu heavy chain disease protein	4.68
4 Ig mu chain C region(A0A087WYJ9)	4.66	Alpha-2-macroglobulin	4.55
5 Fibrinogen beta chain	3.60	Lipoprotein B (Fragment)	3.64
6 Fibrinogen alpha chain	3.28	APOB protein	3.42
7 Putative uncharacterized protein DKFZp686C11235	2.38	Apolipoprotein B (Including Ag(X) antigen)	3.37
8 Fibrinogen gamma chain	2.22	Fibrinogen beta chain	3.05
9 IGH protein	2.11	Fibrinogen alpha chain	2.77
10 Ig gamma-1 chain C region	2.03	Apolipoprotein B variant (Fragment)	2.68
11 IgG H chain	2.03	Protein IGHV3-72	2.11
12 Uncharacterized protein (A8K008)	2.02	Immunoglobulin heavy chain variable region (Fragment)	1.86
13 Uncharacterized protein (Q6N089)	1.96	Fibrinogen gamma chain	1.45
14 Haptoglobin	1.92	Apolipoprotein E isoform 1 (Fragment)	1.34
15 Ig gamma-1 chain C region	1.91	Serum albumin	1.32
16 Protein IGHV3-72	1.90	Immunoglobulin light chain (Fragment)	1.23
17 Putative uncharacterized protein DKFZp686G11190	1.84	Myosin-reactive immunoglobulin heavy chain variable region (Fragment)	1.17
18 Haptoglobin (Fragment)	1.77	IGK protein	1.10
19 Alpha-2-macroglobulin	1.76	Lambda-chain (AA -20 to 215)	1.02
20 Ig gamma-3 chain C region	1.59	C4b-binding protein alpha chain	0.98

Patient 5		Patient 6	
Identified Proteins	RPA%	Identified Proteins	RPA%
1 Full-length cDNA clone CS0DD006YL02	12.44	Full-length cDNA clone CS0DD006YL02	8.00
2 Ig mu chain C region(A0A087X2C0)	8.99	Ig mu chain C region(A0A087X2C0)	5.76
3 Ig mu chain C region(A0A087WYJ9)	8.65	Ig mu chain C region(A0A087WYJ9)	5.46
4 Apolipoprotein B (Including Ag(X) antigen)	3.79	APOB protein	4.92
5 APOB protein	3.79	Apolipoprotein B (Including Ag(X) antigen)	4.52
6 Alpha-2-macroglobulin	3.48	Alpha-2-macroglobulin	4.45
7 Protein IGHV3-72	2.85	Fibrinogen alpha chain	3.93
8 Immunoglobulin heavy chain variable region (Fragment)	2.28	Fibrinogen beta chain	3.43
9 Fibrinogen alpha chain	1.96	Actin, cytoplasmic 2	2.00
10 C4b-binding protein alpha chain	1.95	C4b-binding protein alpha chain	1.66
11 GCT-A10 heavy chain variable region (Fragment)	1.80	Protein IGHV3-72	1.60
12 MS-D3 heavy chain variable region (Fragment)	1.74	Actin, alpha skeletal muscle	1.32
13 Fibrinogen beta chain	1.52	Fibrinogen gamma chain	1.31
14 Haptoglobin (Fragment)	1.24	Apolipoprotein E isoform 1 (Fragment)	1.26
15 GCT-A1 heavy chain variable region (Fragment)	1.23	Serum albumin	1.25
16 Apolipoprotein E isoform 1 (Fragment)	1.20	Haptoglobin	1.22
17 Haptoglobin	1.06	Haptoglobin (Fragment)	1.22
18 Immunoglobulin light chain (Fragment)	1.03	Apolipoprotein C-III	1.07
19 Myosin-reactive immunoglobulin heavy chain variable region (Fragment)	0.99	Myosin-reactive immunoglobulin heavy chain variable region (Fragment)	0.97
20 Lambda-chain (AA -20 to 215)	0.97	Vinculin, isoform CRA_c	0.94

## Supporting Table 3

**Table S3: Characterization of *in vivo* protein corona.** Full list of all the proteins identified in the liposomal protein corona recovered from 6 ovarian carcinoma patients (across all samples).

#	Identified Proteins	Accession Number	MW	RPA% (P1)	RPA% (P2)	RPA% (P3)	RPA% (P4)	RPA% (P5)	RPA% (P6)	Average RPA%	STV
1	Full-length cDNA clone CSODD006YL02 of Homo sapiens (human) OS=Homo sapiens PE=2 SV=1	Q86TT1_HUMAN	41	7.680	4.897	6.908	7.987	12.443	7.997	7.985	2.476
2	Ig mu chain C region OS=Homo sapiens GN=IGHM PE=1 SV=1	A0A087X2C0_HUMAN	64	5.419	3.529	4.812	5.693	8.994	5.756	5.701	1.813
3	Ig mu chain C region OS=Homo sapiens GN=IGHM PE=1 SV=1	A0A087WYJ9_HUMAN	66	5.174	3.402	4.659	0.000	8.654	5.457	4.558	2.831
4	Alpha-2-macroglobulin OS=Homo sapiens GN=A2M PE=1 SV=3	A2MG_HUMAN	163	3.494	3.119	1.758	4.549	3.482	4.448	3.475	1.018
5	Fibrinogen beta chain OS=Homo sapiens GN=FGB PE=1 SV=2	FIBB_HUMAN (+1)	56	5.166	3.952	3.604	3.050	1.524	3.431	3.454	1.191
6	Fibrinogen alpha chain OS=Homo sapiens GN=FGA PE=1 SV=2	FIBA_HUMAN	95	3.253	2.704	3.282	2.766	1.964	3.927	2.983	0.666
7	Apolipoprotein B (Including Ag(x) antigen) OS=Homo sapiens GN=APOB PE=4 SV=1	C0JYY2_HUMAN	516	1.309	1.744	1.096	3.368	3.794	4.518	2.638	1.439
8	Serum albumin OS=Homo sapiens GN=ALB PE=1 SV=2	ALBU_HUMAN	69	1.359	5.469	4.718	1.320	0.692	1.252	2.468	2.062
9	APOB protein OS=Homo sapiens GN=APOB PE=2 SV=1	Q7Z7Q0_HUMAN	92	0.000	0.000	1.205	3.421	3.786	4.924	2.223	2.102
10	ProteinIGHV3-72 OS=Homo sapiens GN=IGHV3-72 PE=1 SV=1	A0A087WV89_HUMAN	11	1.840	1.120	1.904	2.112	2.853	1.602	1.905	0.575
11	C4b-binding protein alpha chain OS=Homo sapiens GN=C4BPA PE=1 SV=2	C4BPA_HUMAN	67	2.553	2.098	1.179	0.979	1.953	1.657	1.736	0.589
12	Fibrinogen gamma chain OS=Homo sapiens GN=FGG PE=1 SV=3	FIBG_HUMAN	52	1.916	1.913	2.224	1.445	0.757	1.311	1.594	0.530
13	Haptoglobin (Fragment) OS=Homo sapiens GN=HP PE=1 SV=1	H3BS21_HUMAN	25	1.407	1.661	1.771	0.820	1.238	1.222	1.353	0.343
14	Haptoglobin OS=Homo sapiens GN=HP PE=1 SV=4	H0Y300_HUMAN	49	1.653	1.490	1.923	0.734	1.056	1.223	1.347	0.429
15	IGH@ protein OS=Homo sapiens GN=IGH@ PE=1 SV=1	Q6GMX6_HUMAN	51	1.160	1.673	2.109	0.813	0.650	0.438	1.140	0.643
16	Ig gamma-1 chain C region OS=Homo sapiens GN=IGHG1 PE=1 SV=1	A0A087WV47_HUMAN (+1)	51	1.055	1.611	2.035	0.893	0.529	0.611	1.122	0.590
17	Uncharacterized protein OS=Homo sapiens PE=1 SV=1	A8K008_HUMAN	52	1.127	1.545	2.023	0.928	0.502	0.565	1.115	0.587
18	Uncharacterized protein OS=Homo sapiens GN=DKFZp686P15220 PE=1 SV=1	Q6N089_HUMAN	52	1.035	1.571	1.959	0.797	0.468	0.497	1.054	0.601
19	IgG H chain OS=Homo sapiens PE=1 SV=1	S6B291_HUMAN	51	1.013	1.557	2.025	0.795	0.451	0.415	1.043	0.638
20	Actin, cytoplasmic 2 OS=Homo sapiens GN=ACTG1 PE=1 SV=1	ACTG_HUMAN (+1)	42	1.395	1.141	0.453	0.835	0.421	2.001	1.041	0.605
21	Ig gamma-1 chain C region OS=Homo sapiens GN=IGH1 PE=1 SV=1	A0A087WYC5_HUMAN	52	0.932	1.474	1.913	0.718	0.340	0.373	0.958	0.626
22	GCT-A10 heavy chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	A0A120HG46_HUMAN	14	1.142	0.717	1.088	0.651	1.800	0.336	0.956	0.510
23	cDNA FLJ14473 fis, clone MAMMA1001080, highly similar to Homo sapiens SNC73 protein (SNC73) mRNA OS=Homo sapiens PE=2 SV=1	Q96K68_HUMAN	53	1.045	1.412	1.015	0.851	0.551	0.776	0.942	0.292
24	Haptoglobin-related protein OS=Homo sapiens GN=HPR PE=2 SV=2	HPTR_HUMAN	39	1.093	1.135	1.135	0.654	0.816	0.738	0.929	0.217
25	Putative uncharacterized protein DKFZp686G11190 OS=Homo sapiens GN=DKFZp686G11190 PE=2 SV=1	Q6MZQ6_HUMAN	52	0.891	1.404	1.840	0.692	0.323	0.350	0.917	0.602
26	Myosin-reactive immunoglobulin heavy chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	Q9UL90_HUMAN	12	1.154	0.875	0.992	0.759	0.995	0.539	0.885	0.215
27	Putative uncharacterized protein DKFZp686C15213 OS=Homo sapiens GN=DKFZp686C15213 PE=2 SV=1	Q6MZU6_HUMAN	51	0.606	1.897	1.363	0.679	0.251	0.415	0.868	0.631
28	Ig gamma-3 chain C region OS=Homo sapiens GN=IGH3 PE=1 SV=1	A0A087WXL8_HUMAN	57	0.794	1.689	1.587	0.599	0.202	0.289	0.860	0.640
29	Apolipoprotein E isoform 1 (Fragment) OS=Homo sapiens GN=APOE PE=2 SV=1	A0A0S2Z3D5_HUMAN (+1)	36	0.281	0.482	0.410	1.341	1.203	1.257	0.829	0.486
30	Putative uncharacterized protein DKFZp686C11235 OS=Homo sapiens GN=DKFZp686C11235 PE=2 SV=1	Q6MZV7_HUMAN	52	0.000	2.325	2.380	0.000	0.000	0.000	0.784	1.215
31	Ig mu heavy chain disease protein OS=Homo sapiens PE=1 SV=1	MUCB_HUMAN	43	0.000	0.000	0.000	4.682	0.000	0.000	0.780	1.911
32	IGK@ protein OS=Homo sapiens GN=IGK@ PE=1 SV=1	Q6PIL8_HUMAN	26	0.676	0.702	0.677	1.104	0.952	0.520	0.772	0.214
33	Complement C3 OS=Homo sapiens GN=C3 PE=1 SV=2	CO3_HUMAN (+1)	187	0.635	1.376	1.184	0.636	0.260	0.512	0.767	0.425
34	Immunglobulin heavy chain variable region (Fragment) OS=Homo sapiens PE=4 SV=1	Q0ZCH9_HUMAN	13	0.000	0.000	0.000	1.857	2.278	0.000	0.689	1.076
35	Beta-globin OS=Homo sapiens GN=HBB PE=3 SV=1	D9YZU5_HUMAN (+1)	16	0.499	0.314	1.517	0.541	0.470	0.477	0.636	0.438
36	MS-D4 heavy chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	A0A0X9UWK7_HUMAN	14	0.495	0.587	0.612	0.553	0.884	0.630	0.627	0.135

1  
2  
3

4	37	IgG L chain OS=Homo sapiens PE=1 SV=1	S6BGD6_HUMAN	25	0.490	0.621	0.628	0.893	0.760	0.353	0.624	0.191
5	38	Immunoglobulin heavy chain variant (Fragment) OS=Homo sapiens PE=2 SV=1	Q9NPP6_HUMAN	45	0.781	1.105	0.804	0.617	0.413	0.000	0.620	0.380
6	39	Anti-FactorVIII scFv (Fragment) OS=Homo sapiens PE=2 SV=1	A2KBC6_HUMAN	25	0.725	0.456	0.666	0.747	0.831	0.235	0.610	0.223
7	40	Lipoprotein B (Fragment) OS=Homo sapiens GN=APOB PE=4 SV=1	S5FLF7_HUMAN	10	0.000	0.000	0.000	3.644	0.000	0.000	0.607	1.488
8	41	Lambda-chain (AA -20 to 215) OS=Homo sapiens PE=1 SV=1	A2NUT2_HUMAN	25	0.000	0.803	0.819	1.020	0.973	0.000	0.602	0.474
9	42	Mutant hemoglobin alpha 2 globin chain OS=Homo sapiens GN=HBA2 PE=3 SV=1	A0A0K2BMD8_HUMAN (+2)	15	0.604	0.365	1.174	0.395	0.442	0.548	0.588	0.301
10	43	Protein IGHV3-74 (Fragment) OS=Homo sapiens GN=IGHV3-74 PE=1 SV=1	A0A0B4J1X5_HUMAN	13	0.656	0.421	0.586	0.596	0.918	0.316	0.582	0.207
11	44	Protein S isoform 1 (Fragment) OS=Homo sapiens GN=PROS1 PE=2 SV=1	A0A0S2Z4K3_HUMAN (+2)	75	0.838	0.560	0.374	0.425	0.542	0.705	0.574	0.173
12	45	Myosin-reactive immunoglobulin heavy chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	Q9UL88_HUMAN	14	1.180	0.000	0.000	1.171	0.000	0.965	0.553	0.610
13	46	Lectin galactoside-binding soluble 3 binding protein isoform 1 (Fragment) OS=Homo sapiens GN=LGALS3BP PE=2 SV=1	A0A0S2Z3Y1_HUMAN (+1)	65	1.115	0.414	0.242	0.343	0.354	0.560	0.505	0.317
14	47	Apolipoprotein C-III OS=Homo sapiens GN=APOC3 PE=2 SV=1	A3KPE2_HUMAN (+2)	11	0.145	0.166	0.173	0.828	0.643	1.068	0.504	0.399
15	48	cDNA FLJ53691, highly similar to Serotransferrin OS=Homo sapiens PE=2 SV=1	B4E1B2_HUMAN	75	0.376	1.028	0.920	0.352	0.088	0.235	0.500	0.383
16	49	cDNA, FLJ94213, highly similar to Homo sapiens pregnancy-zone protein (PZP), mRNA OS=Homo sapiens PE=2 SV=1	B2R950_HUMAN (+1)	164	0.481	0.545	0.360	0.592	0.466	0.516	0.493	0.079
17	50	Thrombospondin-1 OS=Homo sapiens GN=THBS1 PE=1 SV=2	TSP1_HUMAN	129	0.785	0.350	0.244	0.300	0.363	0.852	0.482	0.264
18	51	Protein IGHV5-51 (Fragment) OS=Homo sapiens GN=IGHV5-51 PE=1 SV=1	A0A0C4DH38_HUMAN	13	0.451	0.421	0.439	0.420	0.680	0.407	0.470	0.104
19	52	Vinculin, isoform CRA_c OS=Homo sapiens GN=VCL PE=4 SV=1	A0A024QZN4_HUMAN (+2)	117	0.610	0.378	0.228	0.358	0.227	0.944	0.458	0.277
20	53	Fibronectin 1, isoform CRA_n OS=Homo sapiens GN=FN1 PE=4 SV=1	A0A024R462_HUMAN	259	0.485	0.384	0.351	0.378	0.469	0.665	0.455	0.116
21	54	Apolipoprotein B variant (Fragment) OS=Homo sapiens PE=2 SV=1	Q59HB3_HUMAN	184	0.000	0.000	0.000	2.681	0.000	0.000	0.447	1.094
22	55	Keratin 1 OS=Homo sapiens GN=KRT1 PE=3 SV=1	H6VRF8_HUMAN (+3)	66	0.452	0.512	0.346	0.545	0.342	0.418	0.436	0.084
23	56	Filamin-A OS=Homo sapiens GN=FLNA PE=1 SV=4	FLNA_HUMAN	281	0.595	0.351	0.212	0.311	0.160	0.889	0.420	0.275
24	57	Putative uncharacterized protein DKFZp686L19235 OS=Homo sapiens GN=DKFZp686L19235 PE=2 SV=1	Q6MZV6_HUMAN	52	0.738	1.000	0.741	0.000	0.000	0.000	0.413	0.463
25	58	Ig heavy chain V-III region BUT OS=Homo sapiens PE=1 SV=1	HV306_HUMAN	12	0.355	0.266	0.238	0.493	0.774	0.343	0.412	0.198
26	59	IBM-B2 heavy chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	A0A125QYY9_HUMAN	14	0.381	0.554	0.000	0.423	0.726	0.378	0.410	0.241
27	60	Alpha-1-antitrypsin OS=Homo sapiens GN=SERPINA1 PE=1 SV=3	A1AT_HUMAN (+1)	47	0.442	0.738	0.638	0.291	0.150	0.200	0.410	0.239
28	61	Talin-1 OS=Homo sapiens GN=TLN1 PE=1 SV=3	TLN1_HUMAN	270	0.610	0.370	0.213	0.317	0.170	0.775	0.409	0.236
29	62	Actinin, alpha 1, isoform CRA_a OS=Homo sapiens GN=ACTN1 PE=4 SV=1	A0A024R694_HUMAN (+1)	103	0.672	0.443	0.194	0.301	0.146	0.673	0.405	0.231
30	63	Apolipoprotein A-I, isoform CRA_a OS=Homo sapiens GN=APOA1 PE=4 SV=1	A0A024R3E3_HUMAN (+1)	31	0.395	0.442	0.461	0.544	0.242	0.303	0.398	0.110
31	64	Transferrin variant (Fragment) OS=Homo sapiens PE=2 SV=1	Q53H26_HUMAN	77	0.374	1.037	0.940	0.000	0.000	0.000	0.392	0.485
32	65	von Willebrand factor OS=Homo sapiens GN=VWF PE=1 SV=4	VWF_HUMAN	309	0.760	0.347	0.421	0.124	0.132	0.546	0.388	0.246
33	66	Ig gamma-4 chain C region (Fragment) OS=Homo sapiens GN=IGHG4 PE=1 SV=2	A0A0G2JPD4_HUMAN (+1)	36	0.340	0.837	0.820	0.316	0.000	0.000	0.386	0.373
34	67	von Willebrand factor OS=Homo sapiens GN=VWF PE=4 SV=1	L8E853_HUMAN	298	0.771	0.358	0.441	0.000	0.138	0.592	0.383	0.284
35	68	Immunoglobulin light chain (Fragment) OS=Homo sapiens PE=1 SV=1	Q0KKI6_HUMAN (+1)	24	0.000	0.000	0.000	1.234	1.032	0.000	0.378	0.588
36	69	Rheumatoid factor RF-ET9 (Fragment) OS=Homo sapiens PE=2 SV=1	A2J1N6_HUMAN	13	0.000	0.000	0.586	0.876	0.748	0.000	0.368	0.414
37	70	Coagulation factor XIII A chain OS=Homo sapiens GN=F13A1 PE=1 SV=4	F13A_HUMAN	83	0.558	0.341	0.247	0.181	0.117	0.722	0.361	0.234
38	71	Apolipoprotein C-I, isoform CRA_a OS=Homo sapiens GN=APOC1 PE=4	A0A024R0T8_HUMAN (+2)	9	0.000	0.355	0.000	0.708	0.540	0.522	0.354	0.296

1  
2  
3

4		SV=1										
5	72	Rheumatoid factor RF-ET6 (Fragment) OS=Homo sapiens PE=2 SV=1	A2J1N5_HUMAN	10	0.479	0.319	0.238	0.410	0.619	0.000	0.344	0.214
6	73	Complement factor H OS=Homo sapiens GN=CFH PE=1 SV=4	CFAH_HUMAN	139	0.383	0.473	0.394	0.295	0.162	0.241	0.325	0.114
7	74	Keratin, type I cytoskeletal 10 OS=Homo sapiens GN=KRT10 PE=1 SV=6	K1C10_HUMAN	59	0.370	0.325	0.202	0.440	0.187	0.299	0.304	0.097
8	75	Protein APOC4-APOC2 OS=Homo sapiens GN=APOC4-APOC2 PE=1 SV=1	K7ER74_HUMAN	20	0.160	0.205	0.119	0.387	0.398	0.529	0.300	0.162
9	76	MS-D3 heavy chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	A0A0X9T7T4_HUMAN	15	0.000	0.000	0.000	0.000	1.739	0.000	0.290	0.710
10	77	Ig heavy chain V-III region WEA OS=Homo sapiens PE=1 SV=1	HV302_HUMAN	12	0.444	0.000	0.238	0.455	0.589	0.000	0.288	0.250
11	78	Uncharacterized protein OS=Homo sapiens PE=2 SV=1	A0A5E4_HUMAN	25	0.000	0.000	0.000	0.893	0.831	0.000	0.287	0.446
12	79	Keratin, type I cytoskeletal 9 OS=Homo sapiens GN=KRT9 PE=1 SV=3	K1C9_HUMAN	62	0.361	0.302	0.200	0.389	0.171	0.227	0.275	0.089
13		cDNA FLJ75066, highly similar to Homo sapiens complement component 1, r subcomponent (C1R), mRNA OS=Homo sapiens PE=2 SV=1	A8K5J8_HUMAN (+1)	80	0.400	0.285	0.280	0.199	0.177	0.272	0.269	0.078
14	80	Epididymis tissue protein Li 173 OS=Homo sapiens GN=SERPING1 PE=2 SV=1	E9KL26_HUMAN (+1)	55	0.281	0.490	0.338	0.248	0.080	0.150	0.264	0.144
15	81	Myosin, heavy polypeptide 9, non-muscle, isoform CRA_a OS=Homo sapiens										
16	82	GN=MYH9 PE=4 SV=1	A0A024R1N1_HUMAN (+1)	227	0.439	0.123	0.103	0.209	0.082	0.626	0.264	0.221
17		Cryocystalglobulin CC1 heavy chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	B1N7B6_HUMAN	13	0.410	0.316	0.000	0.315	0.510	0.000	0.259	0.213
18	83	Putative uncharacterized protein DKFZp686I04196 (Fragment) OS=Homo sapiens GN=DKFZp686I04196 PE=2 SV=1	Q6N093_HUMAN	46	0.000	0.000	1.469	0.000	0.000	0.000	0.245	0.600
19	84	Heat shock cognate 71 kDa protein OS=Homo sapiens GN=HSPA8 PE=1 SV=1	HSP7C_HUMAN (+1)	71	0.330	0.296	0.094	0.148	0.062	0.480	0.235	0.161
20	85	Apolipoprotein C-IV OS=Homo sapiens GN=APOC4 PE=2 SV=1	A5YAK2_HUMAN	15	0.000	0.091	0.000	0.334	0.472	0.509	0.234	0.233
21	86	Hemopexin OS=Homo sapiens GN=HPX										
22	87	PE=1 SV=2	HEMO_HUMAN	52	0.143	0.527	0.449	0.105	0.043	0.079	0.224	0.208
23		Epididymis secretory protein Li 52 OS=Homo sapiens GN=HEL-S-52 PE=2 SV=1	V9HWG7_HUMAN (+1)	66	0.347	0.228	0.115	0.110	0.067	0.454	0.220	0.153
24	88	Actin, alpha skeletal muscle OS=Homo sapiens GN=ACTA1 PE=1 SV=1	ACTS_HUMAN (+1)	42	0.000	0.000	0.000	0.000	0.000	1.315	0.219	0.537
25	89	Keratin, type II cytoskeletal 2 epidermal OS=Homo sapiens GN=KRT2 PE=1 SV=2	K22E_HUMAN	65	0.295	0.225	0.154	0.294	0.109	0.217	0.216	0.075
26		Putative uncharacterized protein DKFZp686M08189 OS=Homo sapiens GN=DKFZp686M08189 PE=2 SV=1	Q6MZK9_HUMAN	52	0.697	0.000	0.000	0.587	0.000	0.000	0.214	0.333
27	90	Fermitin family homolog 3 OS=Homo sapiens GN=FERMT3 PE=1 SV=1	URP2_HUMAN	76	0.273	0.150	0.132	0.192	0.064	0.456	0.211	0.139
28	91	Complement C4-B OS=Homo sapiens GN=C4B PE=1 SV=2	CO4B_HUMAN	193	0.177	0.331	0.289	0.177	0.103	0.174	0.208	0.085
29	92	Pyruvate kinase PKM OS=Homo sapiens GN=PKM PE=1 SV=4	KPYM_HUMAN (+1)	58	0.340	0.252	0.148	0.133	0.038	0.334	0.208	0.121
30	93	GCT-A1 heavy chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	A0A125U0V2_HUMAN	14	0.000	0.000	0.000	0.000	1.231	0.000	0.205	0.503
31	94											
32	95	Gelsolin OS=Homo sapiens GN=GSN PE=1 SV=1	GELS_HUMAN	86	0.304	0.202	0.144	0.148	0.087	0.328	0.202	0.095
33		cDNA FLJ32131 fis, clone PEBLM2000267, highly similar to Tubulin alpha-ubiquitous chain OS=Homo sapiens PE=2 SV=1	B3KPS3_HUMAN (+2)	46	0.359	0.139	0.197	0.139	0.000	0.307	0.190	0.129
34	96	cDNA FLJ56821, highly similar to Inter-alpha-trypsin inhibitor heavy chain H1 OS=Homo sapiens PE=2 SV=1	B7Z549_HUMAN (+1)	76	0.154	0.312	0.194	0.204	0.081	0.178	0.187	0.075
35	97	CD5 antigen-like OS=Homo sapiens GN=CD5L PE=1 SV=1	CD5L_HUMAN	38	0.210	0.216	0.301	0.156	0.163	0.077	0.187	0.075
36	98	Ig heavy chain V-III region GAL OS=Homo sapiens PE=1 SV=1	HV320_HUMAN	13	0.000	0.491	0.000	0.000	0.612	0.000	0.184	0.287
37	99	Immunglobulin heavy chain variable region (Fragment) OS=Homo sapiens PE=4 SV=1	Q0ZCH6_HUMAN	14	0.228	0.163	0.170	0.163	0.253	0.126	0.184	0.047
38	100	Complement component 1, q subcomponent, C chain, isoform CRA_a OS=Homo sapiens GN=C1QC PE=4 SV=1	A0A024RAA7_HUMAN (+1)	26	0.164	0.193	0.146	0.193	0.153	0.226	0.179	0.030
39	101											
40	102	Tubulin alpha-4A chain OS=Homo sapiens GN=TUBA4A PE=1 SV=1	TBA4A_HUMAN	50	0.341	0.091	0.171	0.109	0.062	0.294	0.178	0.115
41	103											

1  
2  
3

4	Actinin alpha 4 isoform 1 (Fragment) OS=Homo sapiens GN=ACTN4 PE=2 SV=1	A0A0S2Z3G9_HUMAN (+1)	105	0.416	0.230	0.000	0.108	0.000	0.308	0.177	0.170
5	cDNA FLJ53487, highly similar to Coagulation factor XIII A chain (EC 2.3.2.13) OS=Homo sapiens PE=2 SV=1	B4E2L8_HUMAN	70	0.000	0.274	0.000	0.169	0.000	0.579	0.170	0.230
6	Profilin 1 OS=Homo sapiens GN=PFN1 PE=1 SV=2	PROF1_HUMAN	15	0.213	0.274	0.000	0.121	0.000	0.392	0.167	0.156
7	Immunglobulin heavy chain variable region (Fragment) OS=Homo sapiens PE=4 SV=1	Q0ZCF6_HUMAN	15	0.213	0.122	0.127	0.243	0.295	0.000	0.167	0.106
8	cDNA FLJ35730 fis, clone TESTI2003131, highly similar to ALPHA-1- ANTICHYMOTRYPsin OS=Homo sapiens PE=2 SV=1	B3KS79_HUMAN	51	0.146	0.340	0.289	0.089	0.061	0.069	0.166	0.120
9	cDNA FLJ53025, highly similar to Complement C4-B OS=Homo sapiens PE=2 SV=1	B7Z1F8_HUMAN	30	0.000	0.989	0.000	0.000	0.000	0.000	0.165	0.404
10	Immunoglobulin J chain OS=Homo sapiens GN=JCHAIN PE=1 SV=4	IGJ_HUMAN	18	0.178	0.127	0.079	0.202	0.270	0.131	0.164	0.067
11	78 kDa glucose-regulated protein OS=Homo sapiens GN=HSPA5 PE=1 SV=2	GRP78_HUMAN (+1)	72	0.259	0.165	0.033	0.076	0.031	0.375	0.156	0.139
12	Inter-alpha (Globulin) inhibitor H2 OS=Homo sapiens GN=ITIH2 PE=2 SV=1	A2RTY6_HUMAN (+3)	106	0.131	0.241	0.166	0.163	0.079	0.155	0.156	0.053
13	IGL@ protein OS=Homo sapiens GN=IGL@ PE=1 SV=1	Q6PIK1_HUMAN	25	0.000	0.000	0.000	0.437	0.495	0.000	0.155	0.241
14	Moesin OS=Homo sapiens GN=MSN PE=1 SV=3	MOES_HUMAN (+1)	68	0.212	0.121	0.077	0.121	0.065	0.337	0.155	0.103
15	cDNA FLJ57038, highly similar to Filamin- A OS=Homo sapiens PE=2 SV=1	B4E2F9_HUMAN	83	0.424	0.000	0.000	0.000	0.000	0.488	0.152	0.236
16	Apolipoprotein M OS=Homo sapiens GN=APOM PE=1 SV=2	APOM_HUMAN	21	0.076	0.152	0.045	0.239	0.168	0.224	0.151	0.078
17	Complement component 1, q subcomponent, B chain, isoform CRA_a OS=Homo sapiens GN=C1QB PE=4 SV=1	A0A024RAB9_HUMAN (+3)	27	0.138	0.152	0.071	0.236	0.098	0.196	0.149	0.061
18	Beta 5-tubulin OS=Homo sapiens GN=TUBB PE=2 SV=1	Q5SU16_HUMAN (+1)	50	0.394	0.082	0.067	0.082	0.018	0.235	0.146	0.142
19	IgG H chain OS=Homo sapiens PE=2 SV=1	S6B2A6_HUMAN	32	0.000	0.000	0.684	0.185	0.000	0.000	0.145	0.274
20	Rheumatoid factor RF-IP12 (Fragment) OS=Homo sapiens PE=2 SV=1	A2J1M8_HUMAN	11	0.242	0.166	0.000	0.166	0.281	0.000	0.143	0.119
21	ProteinIGHV3-73 OS=Homo sapiens GN=IGHV3-73 PE=1 SV=1	A0A0G2JN55_HUMAN	9	0.000	0.000	0.000	0.000	0.835	0.000	0.139	0.341
22	Lipoprotein, Lp(A) OS=Homo sapiens GN=LPA PE=1 SV=1	Q1HP67_HUMAN	227	0.005	0.296	0.342	0.014	0.076	0.078	0.135	0.146
23	Keratin, type I cytoskeletal 16 OS=Homo sapiens GN=KRT16 PE=1 SV=4	K1C16_HUMAN	51	0.084	0.134	0.065	0.205	0.173	0.127	0.131	0.053
24	Heat shock protein HSP 90-alpha OS=Homo sapiens GN=HSP90AA1 PE=1 SV=5	HS90A_HUMAN (+1)	85	0.176	0.134	0.084	0.070	0.052	0.270	0.131	0.082
25	Putative uncharacterized protein DKFZp686C0220 (Fragment) OS=Homo sapiens GN=DKFZp686C0220 PE=2 SV=1	Q6N091_HUMAN	54	0.000	0.465	0.000	0.287	0.000	0.000	0.125	0.202
26	Platelet factor 4 OS=Homo sapiens GN=PF4 PE=1 SV=2	PLF4_HUMAN	11	0.194	0.124	0.000	0.166	0.000	0.267	0.125	0.108
27	Apolipoprotein D (Fragment) OS=Homo sapiens GN=APOD PE=1 SV=1	C9JF17_HUMAN	24	0.000	0.000	0.000	0.247	0.203	0.294	0.124	0.139
28	Keratin, type I cytoskeletal 14 OS=Homo sapiens GN=KRT14 PE=1 SV=4	K1C14_HUMAN	52	0.113	0.123	0.000	0.210	0.136	0.136	0.120	0.068
29	Inter-alpha (Globulin) inhibitor H4 (Plasma Kallikrein-sensitive glycoprotein) OS=Homo sapiens GN=ITIH4 PE=2 SV=1	B2RMS9_HUMAN (+1)	103	0.093	0.191	0.254	0.097	0.026	0.051	0.119	0.087
30	Tubulin beta-1 chain OS=Homo sapiens GN=TUBB1 PE=1 SV=1	TBB1_HUMAN	50	0.277	0.100	0.076	0.064	0.027	0.165	0.118	0.090
31	Protein SAA2-SAA4 OS=Homo sapiens GN=SAA2-SAA4 PE=4 SV=1	A0A096LPE2_HUMAN	23	0.000	0.139	0.124	0.079	0.135	0.230	0.118	0.076
32	Protein disulfide-isomerase OS=Homo sapiens PE=2 SV=1	B3KQT9_HUMAN (+2)	54	0.266	0.152	0.035	0.042	0.000	0.207	0.117	0.107
33	Band 3 anion transport protein OS=Homo sapiens GN=SLC4A1 PE=1 SV=3	B3AT_HUMAN (+3)	102	0.193	0.018	0.173	0.103	0.104	0.075	0.111	0.064
34	CP protein OS=Homo sapiens GN=CP PE=2 SV=1	A5PL27_HUMAN (+3)	122	0.057	0.269	0.168	0.090	0.022	0.058	0.110	0.092
35	Integrin beta-3 OS=Homo sapiens GN=ITGB3 PE=1 SV=2	ITB3_HUMAN (+1)	87	0.165	0.063	0.044	0.068	0.041	0.277	0.110	0.094
36	Alpha-1B-glycoprotein OS=Homo sapiens GN=A1BG PE=1 SV=4	A1BG_HUMAN (+1)	54	0.109	0.279	0.167	0.051	0.016	0.033	0.109	0.100
37	Heparin cofactor 2 OS=Homo sapiens	HEP2_HUMAN	57	0.065	0.200	0.209	0.088	0.039	0.052	0.109	0.076

1  
2  
3

4		GN=SERPIND1 PE=1 SV=3									
5	138	Ig heavy chain V-III region CAM OS=Homo sapiens PE=1 SV=1	HV307_HUMAN	14	0.152	0.000	0.136	0.130	0.221	0.000	0.107 0.089
6	139	Apolipoprotein L, 1, isoform CRA_b OS=Homo sapiens GN=APOL1 PE=4 SV=1	A0A024R1G8_HUMAN (+11)	46	0.035	0.040	0.052	0.168	0.173	0.166	0.106 0.070
7	140	Glycoprotein Ib (Platelet), alpha polypeptide OS=Homo sapiens GN=GP1BA PE=1 SV=1	A0A0C4DGZ8_HUMAN (+2)	69	0.131	0.079	0.021	0.053	0.032	0.298	0.102 0.104
8	141	Complement C5 OS=Homo sapiens GN=C5 PE=1 SV=4	C05_HUMAN	188	0.094	0.182	0.180	0.075	0.035	0.044	0.102 0.065
9	142	Endoplasmin OS=Homo sapiens GN=HSP90B1 PE=1 SV=1	ENPL_HUMAN (+2)	92	0.139	0.099	0.047	0.050	0.029	0.243	0.101 0.080
10	143	Rheumatoid factor C6 light chain (Fragment) OS=Homo sapiens GN=V< kappa >1 PE=2 SV=1	A0N5G1_HUMAN	13	0.082	0.140	0.000	0.280	0.102	0.000	0.101 0.104
11	144	Clusterin OS=Homo sapiens GN=CLU PE=1 SV=1	CLUS_HUMAN	52	0.113	0.088	0.073	0.105	0.094	0.124	0.099 0.018
12	145	Adenyl cyclase-associated protein OS=Homo sapiens GN=CAP1 PE=3 SV=1	D3DPU2_HUMAN	52	0.246	0.123	0.073	0.044	0.000	0.102	0.098 0.084
13	146	Complement C1s subcomponent OS=Homo sapiens GN=C1S PE=1 SV=1	C1S_HUMAN	77	0.090	0.207	0.074	0.059	0.052	0.092	0.096 0.057
14	147	Complement C4-A OS=Homo sapiens GN=C4A PE=1 SV=1	A0A0G2JPR0_HUMAN	193	0.000	0.305	0.264	0.000	0.000	0.000	0.095 0.147
15	148	Glyceraldehyde-3-phosphate dehydrogenase OS=Homo sapiens GN=GAPDH PE=1 SV=3	G3P_HUMAN (+1)	36	0.133	0.165	0.066	0.063	0.037	0.098	0.094 0.048
16	149	cDNA FLJ54184, highly similar to Tropomyosin alpha-4 chain OS=Homo sapiens PE=2 SV=1	B4DVY2_HUMAN (+2)	26	0.184	0.088	0.037	0.088	0.000	0.158	0.092 0.070
17	150	Heat shock protein 90kDa alpha (Cytosolic), class B member 1, isoform CRA_a OS=Homo sapiens GN=HSP90AB1 PE=3 SV=1	A0A024RD80_HUMAN (+2)	83	0.122	0.088	0.063	0.055	0.048	0.177	0.092 0.050
18	151	C4b-binding protein beta chain OS=Homo sapiens GN=C4BPB PE=1 SV=1	C4BPB_HUMAN	28	0.171	0.098	0.051	0.081	0.079	0.063	0.091 0.043
19	152	Anti-Influenza A hemagglutinin heavy chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	G1FM90_HUMAN	15	0.213	0.152	0.000	0.000	0.177	0.000	0.090 0.101
20	153	Integrin alpha-IIb OS=Homo sapiens GN=ITGA2B PE=1 SV=3	ITA2B_HUMAN	113	0.132	0.040	0.055	0.060	0.047	0.198	0.089 0.063
21	154	Vitronectin OS=Homo sapiens GN=VTN PE=4 SV=1	D9ZGG2_HUMAN (+1)	54	0.059	0.127	0.203	0.034	0.025	0.076	0.087 0.067
22	155	Keratin, type II cytoskeletal 5 OS=Homo sapiens GN=KRT5 PE=1 SV=3	K2C5_HUMAN	62	0.112	0.088	0.069	0.118	0.050	0.085	0.087 0.025
23	156	Ig heavy chain V-III region GA OS=Homo sapiens PE=1 SV=1	HV308_HUMAN	13	0.205	0.000	0.000	0.175	0.000	0.136	0.086 0.097
24	157	GCT-A2 heavy chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	A0A125U0V4_HUMAN	14	0.000	0.098	0.000	0.098	0.316	0.000	0.085 0.123
25	158	IgFc-binding protein OS=Homo sapiens GN=FCGBP PE=1 SV=1	A0A087WXI2_HUMAN (+1)	445	0.152	0.084	0.062	0.052	0.062	0.098	0.085 0.037
26	159	Plasminogen OS=Homo sapiens GN=PLG PE=1 SV=2	PLMN_HUMAN	91	0.076	0.216	0.136	0.030	0.019	0.032	0.085 0.077
27	160	Ficolin (Collagen/fibrinogen domain containing) 3 (Hakata antigen), isoform CRA_b OS=Homo sapiens GN=FCN3 PE=2 SV=1	Q6UXM4_HUMAN (+1)	32	0.117	0.057	0.074	0.114	0.055	0.092	0.085 0.027
28	161	Vitamin D-binding protein OS=Homo sapiens GN=GC PE=1 SV=1	D6RF35_HUMAN	53	0.030	0.189	0.225	0.026	0.000	0.000	0.078 0.101
29	162	Calreticulin OS=Homo sapiens GN=CALR PE=1 SV=1	CALR_HUMAN (+2)	48	0.144	0.105	0.040	0.028	0.000	0.147	0.077 0.063
30	163	cDNA FLJ53075, highly similar to Kininogen-1 OS=Homo sapiens PE=2 SV=1	B4DPP8_HUMAN (+1)	46	0.046	0.149	0.207	0.050	0.000	0.000	0.075 0.084
31	164	14-3-3 protein zeta/delta OS=Homo sapiens GN=YWHAZ PE=1 SV=1	1433Z_HUMAN (+1)	28	0.057	0.098	0.034	0.081	0.032	0.147	0.075 0.044
32	165	Transitional endoplasmic reticulum ATPase OS=Homo sapiens GN=VCP PE=1 SV=4	TERA_HUMAN (+1)	89	0.138	0.067	0.016	0.041	0.000	0.185	0.074 0.073
33	166	Uncharacterized protein (Fragment) OS=Homo sapiens PE=1 SV=1	A0A0J9YX35_HUMAN	13	0.205	0.000	0.000	0.000	0.238	0.000	0.074 0.115
34	167	cDNA FLJ41552 fis, clone COLON2004478, highly similar to Protein Tro alpha1 H,myeloma OS=Homo sapiens PE=2 SV=1	Q6ZW64_HUMAN	53	0.000	0.000	0.000	0.000	0.434	0.000	0.072 0.177
35	168	Platelet glycoprotein V OS=Homo sapiens GN=GP5 PE=1 SV=1	GPV_HUMAN	61	0.052	0.120	0.000	0.030	0.029	0.202	0.072 0.075

1  
2  
3

4	169	Platelet basic protein OS=Homo sapiens GN=PPBP PE=1 SV=3	CXCL7_HUMAN (+1)	14	0.190	0.000	0.000	0.000	0.063	0.168	0.070	0.088
5	170	Proteoglycan 4, isoform CRA_a OS=Homo sapiens GN=PRG4 PE=4 SV=1	A0A024R930_HUMAN (+2)	151	0.042	0.033	0.035	0.054	0.111	0.132	0.068	0.043
6	171	Protein IGHV3-13 (Fragment) OS=Homo sapiens GN=IGHV3-13 PE=1 SV=1	A0A0A0MS11_HUMAN	13	0.000	0.000	0.000	0.000	0.408	0.000	0.068	0.167
7	172	Complement component 9, isoform CRA_a OS=Homo sapiens GN=C9 PE=4 SV=1	A0A024R035_HUMAN (+1)	63	0.059	0.152	0.151	0.022	0.000	0.019	0.067	0.068
8	173	Protein disulfide-isomerase OS=Homo sapiens GN=P4HB PE=3 SV=1	A0A024R8S5_HUMAN (+1)	57	0.215	0.064	0.025	0.000	0.000	0.093	0.066	0.082
9		Epididymis luminal protein 180 (Fragment) OS=Homo sapiens GN=HEL180 PE=2 SV=1	B6EDE2_HUMAN	13	0.000	0.000	0.000	0.385	0.000	0.000	0.064	0.157
10	174	Heat shock 70 kDa protein 1B OS=Homo sapiens GN=HSPA1B PE=1 SV=1	A0A0G2JW1_HUMAN (+3)	70	0.099	0.085	0.000	0.039	0.000	0.159	0.064	0.063
11	175	Alpha-1-acid glycoprotein 1 OS=Homo sapiens GN=ORM1 PE=1 SV=1	A1AG1_HUMAN (+1)	24	0.089	0.095	0.159	0.038	0.000	0.000	0.063	0.062
12	176	Zyxin OS=Homo sapiens GN=ZYX PE=1 SV=1	ZYX_HUMAN	61	0.105	0.015	0.062	0.075	0.036	0.087	0.063	0.033
13		Anti-streptococcal/anti-myosin immunoglobulin kappa light chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	Q96SA9_HUMAN	12	0.000	0.000	0.159	0.000	0.221	0.000	0.063	0.100
14	178	Catalase OS=Homo sapiens GN=CAT PE=1 SV=3	CATA_HUMAN	60	0.098	0.038	0.095	0.053	0.037	0.059	0.063	0.027
15	179	Integrin-linked protein kinase OS=Homo sapiens GN=ILK PE=1 SV=1	A0A0A0MTH3_HUMAN (+2)	55	0.126	0.108	0.000	0.025	0.000	0.118	0.063	0.061
16	180	GCT-A5 light chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	A0A0X9UWL5_HUMAN	12	0.000	0.000	0.000	0.228	0.147	0.000	0.063	0.100
17	181	Myosin-reactive immunoglobulin heavy chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	Q9UL89_HUMAN	13	0.082	0.000	0.293	0.000	0.000	0.000	0.062	0.118
18	182	cDNA FLJ54622, highly similar to Prothrombin (EC 3.4.21.5) OS=Homo sapiens PE=2 SV=1	B4DDT3_HUMAN (+1)	53	0.060	0.172	0.072	0.034	0.000	0.033	0.062	0.059
19	183	Prenylcysteine oxidase 1 OS=Homo sapiens GN=PCYOX1 PE=1 SV=3	PCYOX_HUMAN	57	0.019	0.056	0.000	0.096	0.078	0.124	0.062	0.047
20	184	Carboxypeptidase N subunit 2 OS=Homo sapiens GN=CPN2 PE=1 SV=3	CPN2_HUMAN	61	0.070	0.097	0.062	0.067	0.036	0.039	0.062	0.023
21	185	V2-17 protein (Fragment) OS=Homo sapiens GN=V2-17 PE=1 SV=1	Q5NV90_HUMAN	10	0.000	0.183	0.095	0.000	0.088	0.000	0.061	0.075
22	186	Multimerin-1 OS=Homo sapiens GN=MMRN1 PE=1 SV=3	MMRN1_HUMAN	138	0.073	0.026	0.045	0.036	0.010	0.166	0.059	0.056
23	187	Ig gamma-1 chain C region OS=Homo sapiens GN=IGHG1 PE=1 SV=1	A0A087X1C7_HUMAN	50	0.000	0.000	0.000	0.000	0.354	0.000	0.059	0.144
24	188	Tropomyosin 3 isoform 1 (Fragment) OS=Homo sapiens GN=TPM3 PE=2 SV=1	A0A0S2Z4G4_HUMAN (+1)	29	0.129	0.063	0.000	0.000	0.000	0.162	0.059	0.072
25	189	Alpha-2-antiplasmin OS=Homo sapiens GN=SERPINF2 PE=1 SV=3	A2AP_HUMAN	55	0.058	0.091	0.113	0.033	0.032	0.021	0.058	0.037
26	190	Calpain 1, (Mu/l) large subunit, isoform CRA_a OS=Homo sapiens GN=CAPN1 PE=4 SV=1	A0A024R580_HUMAN (+2)	82	0.071	0.045	0.012	0.033	0.022	0.165	0.058	0.056
27	191	Ig heavy chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	A0A068LRW6_HUMAN (+2)	14	0.114	0.000	0.102	0.000	0.000	0.126	0.057	0.063
28	192	Enolase 1, (Alpha), isoform CRA_a OS=Homo sapiens GN=ENO1 PE=2 SV=1	A0A024R4F1_HUMAN (+1)	47	0.091	0.058	0.051	0.039	0.000	0.100	0.056	0.036
29	193	Apolipoprotein A-IV OS=Homo sapiens GN=APOA4 PE=1 SV=3	APOA4_HUMAN	45	0.000	0.041	0.042	0.101	0.088	0.065	0.056	0.037
30	194	MS-D1 light chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	A0A0X9TD47_HUMAN	12	0.000	0.000	0.000	0.190	0.147	0.000	0.056	0.088
31	195	Serpin peptidase inhibitor, clade C (Antithrombin), member 1, isoform CRA_a OS=Homo sapiens GN=SERPINC1 PE=3 SV=1	A0A024R944_HUMAN (+1)	53	0.030	0.129	0.099	0.043	0.000	0.033	0.056	0.048
32	196	Uncharacterized protein OS=Homo sapiens PE=1 SV=1	B4E1Z4_HUMAN	141	0.038	0.123	0.142	0.023	0.000	0.008	0.056	0.061
33	197	GCT-A8 heavy chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	A0A0X9V9C4_HUMAN	13	0.000	0.000	0.330	0.000	0.000	0.055	0.135	
34	198	Protein AMBP OS=Homo sapiens GN=AMBP PE=1 SV=1	AMBP_HUMAN	39	0.055	0.140	0.061	0.035	0.023	0.000	0.052	0.048
35	199	Fructose-bisphosphate aldolase A OS=Homo sapiens GN=ALDOA PE=1 SV=2	ALDOA_HUMAN (+2)	39	0.082	0.047	0.000	0.058	0.000	0.105	0.049	0.043
36	200	Clathrin heavy chain OS=Homo sapiens GN=CLTC PE=1 SV=1	A0A087WVQ6_HUMAN (+1)	192	0.103	0.031	0.015	0.021	0.012	0.095	0.046	0.041
37	201	Inter-alpha-trypsin inhibitor heavy chain H3 OS=Homo sapiens GN=ITIH3 PE=1 SV=2	ITIH3_HUMAN	100	0.059	0.100	0.076	0.027	0.013	0.000	0.046	0.039

1  
2  
3

4	203	Pleckstrin OS=Homo sapiens GN=PLEK PE=1 SV=3	PLEK_HUMAN	40	0.080	0.091	0.000	0.000	0.000	0.103	0.046	0.051
5	204	A30 (Fragment) OS=Homo sapiens PE=4 SV=1	A2MYE1_HUMAN (+1)	10	0.000	0.000	0.000	0.273	0.000	0.000	0.046	0.112
6	205	Glycogen phosphorylase, brain form OS=Homo sapiens GN=PYGB PE=1 SV=5	PYGB_HUMAN (+1)	97	0.071	0.061	0.015	0.038	0.000	0.085	0.045	0.033
7	206	Coagulation factor XIII B chain OS=Homo sapiens GN=F13B PE=1 SV=3	F13B_HUMAN	76	0.056	0.054	0.063	0.048	0.017	0.031	0.045	0.017
8	207	Rheumatoid factor RF-E10 (Fragment) OS=Homo sapiens PE=2 SV=1	A2J1N7_HUMAN	10	0.000	0.000	0.000	0.000	0.265	0.000	0.044	0.108
9	208	cDNA FLJ61290, highly similar to Neutral alpha-glucosidase AB OS=Homo sapiens PE=2 SV=1	B4DJ30_HUMAN (+2)	113	0.052	0.044	0.013	0.016	0.008	0.120	0.042	0.042
10	209	Phosphoglucomutase-1 OS=Homo sapiens GN=PGM1 PE=1 SV=3	PGM1_HUMAN	61	0.061	0.052	0.000	0.022	0.000	0.116	0.042	0.044
11	210	Complement component 1, q subcomponent, A chain, isoform CRA_a OS=Homo sapiens GN=C1QA PE=4 SV=1	A0A024RAG6_HUMAN (+2)	26	0.061	0.035	0.000	0.035	0.051	0.068	0.042	0.024
12	211	HCG2039812, isoform CRA_b (Fragment) OS=Homo sapiens GN=KRT6A PE=2 SV=1	A0A0S2Z428_HUMAN (+3)	60	0.000	0.084	0.000	0.099	0.066	0.000	0.041	0.047
13	212	Protein IGKV2D-24 (Fragment) OS=Homo sapiens GN=IGKV2D-24 PE=4 SV=1	A0A075B6R9_HUMAN (+1)	13	0.000	0.000	0.000	0.105	0.000	0.136	0.040	0.063
14	213	ProteinIGHV1-46 (Fragment) OS=Homo sapiens GN=IGHV1-46 PE=4 SV=1	A0A0B4J1V4_HUMAN (+1)	13	0.000	0.070	0.000	0.000	0.170	0.000	0.040	0.070
15	214	Class IVb beta tubulin OS=Homo sapiens PE=2 SV=1	Q8IWP6_HUMAN (+3)	50	0.000	0.000	0.000	0.000	0.000	0.235	0.039	0.096
16	215	cDNA FLJ78516 OS=Homo sapiens PE=2 SV=1	A8K2W3_HUMAN (+1)	47	0.102	0.000	0.041	0.029	0.000	0.063	0.039	0.039
17	216	Transketolase (Fragment) OS=Homo sapiens PE=2 SV=1	Q53EM5_HUMAN (+2)	68	0.063	0.040	0.000	0.020	0.000	0.104	0.038	0.040
18	217	Myosin light polypeptide 6 OS=Homo sapiens GN=MLY6 PE=1 SV=1	B7Z6Z4_HUMAN (+6)	27	0.138	0.000	0.000	0.000	0.000	0.087	0.038	0.060
19	218	Spectrin alpha chain, erythrocytic 1 OS=Homo sapiens GN=SPTA1 PE=1 SV=1	A0A087WZE4_HUMAN (+1)	281	0.072	0.000	0.068	0.039	0.033	0.013	0.037	0.029
20	219	L-lactate dehydrogenase B chain OS=Homo sapiens GN=LDHB PE=1 SV=2	LDHB_HUMAN (+1)	37	0.043	0.037	0.000	0.062	0.000	0.079	0.037	0.032
21	220	Mannan-binding lectin serine protease 1 OS=Homo sapiens GN=MASP1 PE=1 SV=3	MASP1_HUMAN	79	0.067	0.040	0.018	0.029	0.028	0.030	0.035	0.017
22	221	Complement component C6 OS=Homo sapiens GN=C6 PE=1 SV=3	CO6_HUMAN	105	0.015	0.091	0.073	0.013	0.008	0.011	0.035	0.037
23	222	GDP dissociation inhibitor 1 isoform 1 (Fragment) OS=Homo sapiens GN=GDI1 PE=2 SV=1	A0A0S2Z3X8_HUMAN (+2)	51	0.104	0.027	0.019	0.000	0.000	0.058	0.035	0.040
24	223	Ankyrin-1 OS=Homo sapiens GN=ANK1 PE=1 SV=3	ANK1_HUMAN	206	0.067	0.000	0.067	0.031	0.021	0.020	0.034	0.027
25	224	Ig heavy chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	A0A068LKQ2_HUMAN	13	0.000	0.000	0.000	0.000	0.204	0.000	0.034	0.083
26	225	Cofilin-1 OS=Homo sapiens GN=CFL1 PE=1 SV=3	COF1_HUMAN (+3)	19	0.056	0.048	0.000	0.000	0.000	0.093	0.033	0.039
27	226	Polymeric immunoglobulin receptor OS=Homo sapiens GN=PIGR PE=1 SV=4	PIGR_HUMAN	83	0.032	0.016	0.017	0.022	0.107	0.000	0.032	0.038
28	227	Coronin OS=Homo sapiens GN=CORO1A PE=3 SV=1	A0A024R611_HUMAN (+1)	51	0.084	0.027	0.019	0.018	0.000	0.046	0.032	0.029
29	228	Transferrin receptor protein 1 OS=Homo sapiens GN=TFRC PE=1 SV=2	TFR1_HUMAN	85	0.069	0.027	0.028	0.027	0.000	0.041	0.032	0.023
30	229	Hexokinase (Fragment) OS=Homo sapiens PE=2 SV=1	Q59FD4_HUMAN	106	0.040	0.034	0.000	0.009	0.000	0.105	0.031	0.040
31	230	Soluble scavenger receptor cysteine-rich domain-containing protein SSC5D OS=Homo sapiens GN=SSC5D PE=1 SV=3	SRCRL_HUMAN	166	0.055	0.025	0.029	0.022	0.027	0.032	0.031	0.012
32	231	cDNA FLJ55606, highly similar to Alpha-2- HS-glycoprotein OS=Homo sapiens PE=2 SV=1	B7Z8Q2_HUMAN (+2)	47	0.000	0.078	0.091	0.019	0.000	0.000	0.031	0.042
33	232	Ig heavy chain V-III region JON OS=Homo sapiens PE=1 SV=1	HV319_HUMAN	13	0.082	0.000	0.000	0.000	0.102	0.000	0.031	0.048
34	233	Peptidyl-prolyl cis-trans isomerase OS=Homo sapiens PE=2 SV=1	A8K486_HUMAN (+3)	18	0.000	0.000	0.000	0.051	0.000	0.131	0.030	0.053
35	234	Spectrin, beta, erythrocytic (Includes spherocytosis, clinical type I) variant (Fragment) OS=Homo sapiens PE=2 SV=1	Q59FP5_HUMAN	268	0.060	0.007	0.052	0.025	0.016	0.018	0.030	0.021
36	235	RAP1B, member of RAS oncogene family, isoform CRA_a OS=Homo sapiens GN=RAP1B PE=4 SV=1	A0A024RB87_HUMAN (+3)	21	0.000	0.065	0.000	0.000	0.000	0.112	0.030	0.048
37	236	Coagulation factor V OS=Homo sapiens	A0A0A0MRJ7_HUMAN (+1)	252	0.051	0.025	0.013	0.023	0.021	0.042	0.029	0.014

1  
2  
3

4		GN=F5 PE=1 SV=1										
5		Ubiquitin-activating enzyme E1 (A1S9T and BN75 temperature sensitivity complementing), isoform CRA_a										
6	237	OS=Homo sapiens GN=UBE1 PE=3 SV=1	A0A024R1A3_HUMAN (+1)	118	0.050	0.043	0.012	0.000	0.000	0.070	0.029	0.029
7		cDNA FLJ93914, highly similar to Homo sapiens histidine-rich glycoprotein (HRG), mRNA OS=Homo sapiens PE=2 SV=1	B2R8I2_HUMAN (+1)	60	0.036	0.061	0.040	0.023	0.015	0.000	0.029	0.021
8	238	Protein unc-13 homolog D OS=Homo sapiens GN=UNC13D PE=1 SV=1	UN13D_HUMAN	123	0.052	0.026	0.000	0.000	0.000	0.096	0.029	0.039
9	239	Apolipoprotein A-II OS=Homo sapiens GN=APOA2 PE=1 SV=1	APOA2_HUMAN (+3)	11	0.000	0.000	0.000	0.166	0.000	0.000	0.028	0.068
10	240	Nucleosome assembly protein 1-like 1, isoform CRA_a OS=Homo sapiens GN=NAP1L1 PE=3 SV=1	A0A024RBB7_HUMAN (+12)	45	0.059	0.030	0.021	0.000	0.000	0.052	0.027	0.025
11	241	Serum paraoxonase/arylesterase 1 OS=Homo sapiens GN=PON1 PE=1 SV=3	PON1_HUMAN	40	0.000	0.068	0.048	0.046	0.000	0.000	0.027	0.031
12	242	Protein IGKV2D-28 OS=Homo sapiens GN=IGKV2D-28 PE=1 SV=1	A0A0A0MTQ6_HUMAN (+2)	11	0.000	0.000	0.000	0.000	0.161	0.000	0.027	0.066
13	243	Beta-2-glycoprotein 1 OS=Homo sapiens GN=APOH PE=1 SV=3	APOH_HUMAN (+1)	38	0.000	0.060	0.100	0.000	0.000	0.000	0.027	0.043
14	244	cDNA FLJ50805, highly similar to Erythrocyte membrane protein band 4.2 OS=Homo sapiens PE=2 SV=1	B7Z4C3_HUMAN (+1)	77	0.055	0.000	0.049	0.035	0.017	0.000	0.026	0.024
15	245	Transgelin-2 OS=Homo sapiens GN=TAGLN2 PE=1 SV=3	TAGL2_HUMAN (+1)	22	0.048	0.000	0.000	0.000	0.000	0.107	0.026	0.044
16	246	Cryocrystalglobulin CC1 kappa light chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	B1N7B8_HUMAN	12	0.000	0.000	0.000	0.152	0.000	0.000	0.025	0.062
17	247	Syntaxin-binding protein 2 OS=Homo sapiens GN=STXBP2 PE=1 SV=2	STXB2_HUMAN	66	0.032	0.035	0.000	0.000	0.000	0.080	0.024	0.032
18	248	Phosphoglycerate kinase OS=Homo sapiens PE=2 SV=1	B4E1H9_HUMAN (+2)	35	0.030	0.039	0.000	0.026	0.000	0.050	0.024	0.021
19	249	cDNA FLJ77947, highly similar to Human complement protein C8 beta subunit mRNA OS=Homo sapiens PE=2 SV=1	A8K9M5_HUMAN (+6)	67	0.024	0.048	0.071	0.000	0.000	0.000	0.024	0.030
20	250	Beta-parvin OS=Homo sapiens GN=PARVB PE=1 SV=1	PARVB_HUMAN	42	0.038	0.033	0.000	0.000	0.000	0.070	0.023	0.029
21	251	Programmed cell death 6-interacting protein OS=Homo sapiens GN=PDCD6IP PE=1 SV=1	PDC6I_HUMAN (+1)	96	0.028	0.019	0.000	0.000	0.000	0.092	0.023	0.036
22	252	T-complex protein 1 subunit gamma OS=Homo sapiens PE=2 SV=1	B3KX11_HUMAN (+4)	58	0.064	0.000	0.000	0.000	0.000	0.071	0.023	0.035
23	253	Nicotinate phosphoribosyltransferase (Fragment) OS=Homo sapiens GN=NAPRT PE=1 SV=1	H0YDA6_HUMAN	14	0.000	0.000	0.068	0.000	0.063	0.000	0.022	0.034
24	254	Glucose-6-phosphate isomerase (Fragment) OS=Homo sapiens GN=GPI PE=1 SV=1	A0A0A0MTS2_HUMAN	65	0.066	0.042	0.022	0.000	0.000	0.000	0.022	0.027
25	255	Arachidonate 12-lipoxygenase, 12S-type OS=Homo sapiens GN=ALOX12 PE=1 SV=4	LOX12_HUMAN	76	0.056	0.000	0.025	0.000	0.000	0.046	0.021	0.025
26	256	ATP-dependent 6-phosphofructokinase, platelet type OS=Homo sapiens GN=PFKP PE=1 SV=2	PFKAP_HUMAN	86	0.037	0.053	0.000	0.000	0.000	0.034	0.021	0.024
27	257	IQ motif containing GTPase activating protein 2, isoform CRA_b OS=Homo sapiens GN=IQGAP2 PE=4 SV=1	A0A024RAJ8_HUMAN (+2)	181	0.032	0.023	0.000	0.013	0.000	0.055	0.020	0.021
28	258	Glucose-6-phosphate 1-dehydrogenase OS=Homo sapiens GN=G6PD PE=1 SV=4	G6PD_HUMAN	59	0.054	0.031	0.016	0.000	0.000	0.020	0.020	0.021
29	259	Nidogen-1 OS=Homo sapiens GN=NID1 PE=1 SV=3	NID1_HUMAN	136	0.051	0.007	0.000	0.013	0.007	0.043	0.020	0.021
30	260	cDNA FLJ95650, highly similar to Homo sapiens karyopherin (importin) beta 1 (KPNB1), mRNA OS=Homo sapiens PE=2 SV=1	B2RBR9_HUMAN (+1)	97	0.044	0.024	0.010	0.000	0.000	0.042	0.020	0.020
31	261	cDNA FLJ78207, highly similar to Human complement protein component C7 mRNA OS=Homo sapiens PE=2 SV=1	A8K2T4_HUMAN (+2)	93	0.000	0.074	0.046	0.000	0.000	0.000	0.020	0.032
32	262	Chloride intracellular channel protein 1 OS=Homo sapiens GN=CLIC1 PE=1 SV=4	CLIC1_HUMAN (+2)	27	0.039	0.034	0.000	0.000	0.000	0.044	0.019	0.022
33	263	Plasma kallikrein (Fragment) OS=Homo sapiens GN=KLKB1 PE=1 SV=1	H0YAC1_HUMAN (+1)	77	0.014	0.041	0.049	0.012	0.000	0.000	0.019	0.021
34	264	Rho-associated protein kinase 2 OS=Homo sapiens GN=ROCK2 PE=1 SV=4	ROCK2_HUMAN	161	0.033	0.014	0.000	0.000	0.000	0.066	0.019	0.026
35	265	Tyrosine-protein phosphatase non-receptor type 6 OS=Homo sapiens	PTN6_HUMAN (+2)	68	0.024	0.034	0.000	0.027	0.000	0.026	0.018	0.015
36	266											

1  
2  
3

4		GN=PTPN6 PE=1 SV=1										
5	267	Triosephosphate isomerase OS=Homo sapiens PE=2 SV=1	B4DUI5_HUMAN (+4)	23	0.069	0.040	0.000	0.000	0.000	0.000	0.018	0.030
6	268	cDNA FLJ50442, highly similar to T-complex protein 1 subunit epsilon OS=Homo sapiens PE=2 SV=1	B4DDU6_HUMAN (+5)	55	0.048	0.017	0.000	0.000	0.000	0.043	0.018	0.022
7	269	Ig heavy chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	A0A068LN03_HUMAN	13	0.000	0.000	0.000	0.105	0.000	0.000	0.018	0.043
8	270	Protein IGKV1-16 (Fragment) OS=Homo sapiens GN=IGKV1-16 PE=1 SV=1	A0A0A0MT74_HUMAN	13	0.000	0.000	0.000	0.105	0.000	0.000	0.018	0.043
9		Chaperonin containing TCP1, subunit 7 (Eta) variant (Fragment) OS=Homo sapiens PE=2 SV=1	Q53HV2_HUMAN (+1)	59	0.036	0.039	0.000	0.000	0.000	0.030	0.017	0.019
10	271	Complement component C8 alpha chain OS=Homo sapiens GN=C8A PE=1 SV=2	C08A_HUMAN	65	0.025	0.042	0.037	0.000	0.000	0.000	0.017	0.020
11	272	Coronin OS=Homo sapiens GN=CORO1C PE=3 SV=1	A0A024RB15_HUMAN (+3)	53	0.080	0.000	0.000	0.000	0.000	0.022	0.017	0.032
12	273	EH domain-containing protein 3 OS=Homo sapiens GN=EHD3 PE=1 SV=1	A0A0C4DH83_HUMAN (+1)	62	0.026	0.022	0.000	0.015	0.000	0.038	0.017	0.015
13	274	Puromycin-sensitive aminopeptidase OS=Homo sapiens GN=NPEPPS PE=1 SV=2	PSA_HUMAN	103	0.010	0.027	0.000	0.000	0.000	0.063	0.017	0.025
14	275	Chaperonin containing TCP1, subunit 8 (Theta) variant (Fragment) OS=Homo sapiens PE=2 SV=1	Q53HU0_HUMAN (+2)	60	0.044	0.015	0.000	0.000	0.000	0.039	0.016	0.021
15	276	Protein disulfide-isomerase A6 OS=Homo sapiens GN=PDIA6 PE=1 SV=1	PDIA6_HUMAN	48	0.022	0.038	0.000	0.000	0.000	0.037	0.016	0.019
16	277	Protein S100-A8 OS=Homo sapiens GN=S100A8 PE=1 SV=1	S10A8_HUMAN	11	0.097	0.000	0.000	0.000	0.000	0.000	0.016	0.040
17	278	Capping protein (Actin filament) muscle Z-line, beta, isoform CRA_a OS=Homo sapiens GN=CAPZB PE=1 SV=1	B1AK87_HUMAN (+3)	29	0.055	0.000	0.000	0.000	0.000	0.041	0.016	0.025
18	279	Rheumatoid factor RF-IP4 (Fragment) OS=Homo sapiens PE=2 SV=1	A2J1M5_HUMAN	10	0.000	0.000	0.095	0.000	0.000	0.000	0.016	0.039
19	280	LTBP1 protein OS=Homo sapiens GN=LTBP1 PE=2 SV=1	B7ZLY3_HUMAN (+3)	148	0.029	0.009	0.000	0.012	0.009	0.036	0.016	0.014
20	281	cDNA FLJ51409, highly similar to Thrombospondin-4 OS=Homo sapiens PE=2 SV=1	B7Z832_HUMAN (+2)	96	0.028	0.010	0.015	0.009	0.014	0.018	0.016	0.007
21	282	Alpha-1,4 glucan phosphorylase OS=Homo sapiens PE=2 SV=1	B2R825_HUMAN (+1)	97	0.038	0.000	0.000	0.000	0.000	0.055	0.015	0.025
22	283	Serum amyloid P-component OS=Homo sapiens GN=APCS PE=1 SV=2	SAMP_HUMAN (+1)	25	0.000	0.055	0.038	0.000	0.000	0.000	0.015	0.025
23	284	Cyttoplasmic FMR1 interacting protein 1 isoform A (Fragment) OS=Homo sapiens GN=CYFIP1 PE=2 SV=1	X5D2F4_HUMAN	145	0.029	0.019	0.000	0.006	0.000	0.036	0.015	0.016
24	285	Protein disulfide-isomerase A4 OS=Homo sapiens GN=ERP70 PE=3 SV=1	A0A090N8Y2_HUMAN (+1)	73	0.029	0.013	0.000	0.000	0.000	0.048	0.015	0.020
25	286	cDNA FLJ50491, highly similar to Amyloid beta A4 protein (APP) (ABPP)(Alzheimer disease amyloid protein) (Cerebral vascular amyloid peptide) (CVAP) (Protease nexin-II) (PN-II)(APP1) (PreA4) OS=Homo sapiens PE=2 SV=1	B4DG00_HUMAN	81	0.046	0.000	0.000	0.000	0.000	0.044	0.015	0.023
26	287	CD36 antigen (Collagen type I receptor, thrombospondin receptor) OS=Homo sapiens GN=CD36 PE=2 SV=1	A4D1B1_HUMAN (+6)	53	0.020	0.000	0.000	0.000	0.000	0.067	0.014	0.027
27	288	L-lactate dehydrogenase A chain OS=Homo sapiens GN=LDHA PE=1 SV=2	LDHA_HUMAN (+1)	37	0.000	0.037	0.000	0.000	0.000	0.048	0.014	0.022
28	289	Proto-oncogene tyrosine-protein kinase Src OS=Homo sapiens GN=SRC PE=1 SV=3	SRC_HUMAN	60	0.027	0.038	0.000	0.000	0.000	0.020	0.014	0.016
29	290	V-type proton ATPase catalytic subunit A OS=Homo sapiens GN=ATP6V1A PE=1 SV=2	VATA_HUMAN	68	0.024	0.000	0.000	0.000	0.000	0.060	0.014	0.025
30	291	Heat shock 60kDa protein 1 (Chaperonin), isoform CRA_a OS=Homo sapiens GN=HSPD1 PE=2 SV=1	A0A024R3X4_HUMAN (+2)	61	0.035	0.000	0.000	0.000	0.000	0.048	0.014	0.022
31	292	cDNA FLJ93545, highly similar to Homo sapiens 5-aminoimidazole-4-carboxamide ribonucleotide formyltransferase/IMP cyclohydrolase (ATIC), mRNA OS=Homo sapiens PE=2 SV=1	B2R7P8_HUMAN (+2)	65	0.041	0.014	0.000	0.000	0.000	0.027	0.014	0.017
32	293	cDNA FLJ92620, highly similar to Homo sapiens staphylococcal nuclease domain containing 1 (SND1),mRNA OS=Homo sapiens PE=2 SV=1	B2R5U1_HUMAN (+3)	100	0.027	0.014	0.000	0.000	0.000	0.041	0.014	0.017
33	294	Ubiquitin-like modifier-activating enzyme 7	UBA7_HUMAN	112	0.010	0.024	0.000	0.000	0.000	0.047	0.014	0.019

1  
2  
3

4		OS=Homo sapiens GN=UBA7 PE=1 SV=2									
5		Afamin OS=Homo sapiens GN=AFM PE=1									
6	296	SV=1	AFAM_HUMAN	69	0.000	0.040	0.028	0.013	0.000	0.000	0.013 0.017
7	297	Angiotensinogen variant (Fragment)									
8		OS=Homo sapiens PE=2 SV=1	Q53GY3_HUMAN (+3)	53	0.000	0.017	0.063	0.000	0.000	0.000	0.013 0.025
9	298	Dihydropyrimidinase-like 2 variant									
10		(Fragment) OS=Homo sapiens PE=2 SV=1	Q59GB4_HUMAN	68	0.063	0.000	0.000	0.000	0.000	0.017	0.013 0.025
11	299	Alpha-1-acid glycoprotein 2 OS=Homo									
12		sapiens GN=ORM2 PE=1 SV=2	A1AG2_HUMAN	24	0.000	0.000	0.079	0.000	0.000	0.000	0.013 0.032
13		Iscitrate dehydrogenase [NADP],									
14		mitochondrial OS=Homo sapiens									
15	300	GN=IDH2 PE=1 SV=2	IDHP_HUMAN (+1)	51	0.021	0.000	0.000	0.000	0.000	0.058	0.013 0.023
16	301	Integrin beta-1 OS=Homo sapiens									
17		GN=ITGB1 PE=1 SV=2	ITB1_HUMAN	88	0.018	0.000	0.000	0.000	0.000	0.060	0.013 0.024
18	302	Bridging integrator 2 OS=Homo sapiens									
19		GN=BIN2 PE=1 SV=1	A0A087X188_HUMAN (+4)	65	0.025	0.000	0.000	0.035	0.000	0.018	0.013 0.015
20	303	Protein diaphanous homolog 1 OS=Homo									
21		sapiens GN=DIAPH1 PE=1 SV=1	A0A0G2JH68_HUMAN (+3)	141	0.019	0.016	0.000	0.000	0.000	0.042	0.013 0.017
22		Chaperonin containing TCP1, subunit 6A									
23	304	(Zeta 1), isoform CRA_a OS=Homo									
24		sapiens GN=CCT6A PE=3 SV=1	A0A024RDL1_HUMAN (+2)	58	0.055	0.000	0.000	0.000	0.000	0.020	0.013 0.022
25		Lipoplysaccharide-binding protein									
26	305	OS=Homo sapiens GN=LBP PE=1 SV=3	LBP_HUMAN (+1)	53	0.000	0.017	0.036	0.000	0.000	0.022	0.013 0.015
27	306	Oncoprotein-induced transcript 3 protein									
28		OS=Homo sapiens GN=OIT3 PE=1 SV=2	OIT3_HUMAN	60	0.036	0.000	0.000	0.000	0.000	0.039	0.012 0.019
29	307	Calcium-transporting ATPase OS=Homo									
30		sapiens PE=2 SV=1	A8K9K1_HUMAN (+1)	109	0.015	0.000	0.000	0.000	0.000	0.059	0.012 0.024
31	308	Lumican OS=Homo sapiens GN=LUM									
32		PE=1 SV=2	LUM_HUMAN (+1)	38	0.000	0.036	0.038	0.000	0.000	0.000	0.012 0.019
33		cDNA, FLJ94361, highly similar to Homo									
34	309	sapiens serine (or cysteine) proteinase									
35		inhibitor, clade A(alpha-1 antiproteinase,									
36		antitrypsin), member 6 (SERPINA6),									
37		member 6 (SERPINA6), isoform CRA_b									
38	310	OS=Homo sapiens GN=HSD17B4 PE=2 SV=1	A0A0S2Z4J1_HUMAN (+2)	80	0.020	0.000	0.000	0.000	0.000	0.051	0.012 0.021
39	311	Anti-HER3 scFv (Fragment) OS=Homo									
40		sapiens PE=2 SV=1	A2J422_HUMAN	26	0.000	0.070	0.000	0.000	0.000	0.000	0.012 0.029
41	312	Ig heavy chain V-III region TRO OS=Homo									
42		sapiens PE=1 SV=1	HV301_HUMAN	13	0.000	0.000	0.000	0.070	0.000	0.000	0.012 0.029
43	313	Beta-arrestin-1 (Fragment) OS=Homo									
44		sapiens GN=ARRB1 PE=1 SV=7	E9PM35_HUMAN	29	0.037	0.031	0.000	0.000	0.000	0.000	0.011 0.018
45	314	N-acetylmuramoyl-L-alanine amidase									
46		OS=Homo sapiens GN=PGLYRP2 PE=1									
47		SV=1	PGRP2_HUMAN	62	0.000	0.037	0.031	0.000	0.000	0.000	0.011 0.018
48	315	Fibulin-1 OS=Homo sapiens GN=FBLN1									
49		PE=1 SV=4	FBLN1_HUMAN	77	0.000	0.041	0.012	0.012	0.000	0.000	0.011 0.016
50	316	Selectin P (Granule membrane protein									
51		140kDa, antigen CD62), isoform CRA_b									
52		OS=Homo sapiens GN=SELP PE=4 SV=1	A0A024R8Y9_HUMAN (+7)	91	0.018	0.015	0.000	0.000	0.000	0.032	0.011 0.013
53	317	LIM and senescent cell antigen-like-									
54		containing domain protein 3 OS=Homo									
55		sapiens GN=LIMS4 PE=1 SV=1	A0A0J9YXC7_HUMAN (+1)	46	0.035	0.030	0.000	0.000	0.000	0.000	0.011 0.017
56	318	T-complex protein 1 subunit delta									
57		OS=Homo sapiens PE=2 SV=1	A8K3C3_HUMAN (+1)	58	0.064	0.000	0.000	0.000	0.000	0.000	0.011 0.026
58	319	T-complex protein 1 subunit alpha									
59		OS=Homo sapiens GN=TCP1 PE=1 SV=1	TCPA_HUMAN	60	0.044	0.000	0.000	0.000	0.000	0.020	0.011 0.018
60	320	Glutathione reductase, mitochondrial									
61		OS=Homo sapiens GN=GSR PE=1 SV=2	GSHR_HUMAN (+1)	56	0.048	0.016	0.000	0.000	0.000	0.000	0.011 0.019
62		Phospholipase A2, group VII (Platelet-									
63	321	activating factor acetylhydrolase, plasma),									
64		isoform CRA_a OS=Homo sapiens									
65		GN=PLA2G7 PE=4 SV=1	A0A024RD39_HUMAN (+2)	50	0.000	0.000	0.000	0.036	0.027	0.000	0.010 0.017
66	322	14-3-3 protein eta OS=Homo sapiens									
67		GN=YWHAH PE=1 SV=4	1433F_HUMAN (+1)	28	0.000	0.000	0.000	0.000	0.000	0.063	0.010 0.026
68	323	Tripeptidyl-peptidase 2 OS=Homo sapiens									
69		GN=TPP2 PE=1 SV=1	Q5VZU9_HUMAN (+1)	140	0.038	0.007	0.000	0.000	0.000	0.017	0.010 0.015
70	324	cGMP-dependent protein kinase 1									
71		OS=Homo sapiens GN=PRKG1 PE=1									
72		SV=1	A0A0A0MSB3_HUMAN (+1)	52	0.000	0.026	0.000	0.000	0.000	0.034	0.010 0.016
73	325	Alanine-tRNA ligase, cytoplasmic									
74		OS=Homo sapiens GN=AARS PE=1 SV=2	SYAC_HUMAN	107	0.010	0.009	0.000	0.009	0.000	0.033	0.010 0.012
75	326	Complement factor I OS=Homo sapiens									
76		GN=CFI PE=1 SV=2	CFAI_HUMAN (+2)	66	0.016	0.014	0.029	0.000	0.000	0.000	0.010 0.012
77	327	Reelin OS=Homo sapiens GN=RELN									
78		PE=1 SV=1	J3KQ66_HUMAN (+1)	388	0.025	0.011	0.005	0.000	0.000	0.018	0.010 0.010
79	328	Dipeptidyl peptidase 3 OS=Homo sapiens									
80		GN=DPP3_HUMAN (+2)	DPP3_HUMAN (+2)	83	0.019	0.000	0.000	0.000	0.000	0.035	0.009 0.015

1  
2  
3

4		GN=DPP3 PE=1 SV=2										
5		TNC variant protein (Fragment) OS=Homo sapiens GN=TNC variant protein PE=2 SV=1	Q4LE33_HUMAN	244	0.017	0.006	0.000	0.011	0.020	0.000	0.009	0.009
6	329	Phosphodiesterase 5A OS=Homo sapiens PE=2 SV=1	I6NLS4_HUMAN (+1)	100	0.000	0.018	0.000	0.000	0.000	0.035	0.009	0.015
7	330	Carboxypeptidase N catalytic chain OS=Homo sapiens GN=CPN1 PE=1 SV=1	CBPN_HUMAN	52	0.000	0.035	0.018	0.000	0.000	0.000	0.009	0.015
8	331	IgG H chain OS=Homo sapiens PE=2 SV=1	S6AWF0_HUMAN	25	0.000	0.000	0.000	0.000	0.053	0.000	0.009	0.022
9	332	NAD-dependent malic enzyme, mitochondrial OS=Homo sapiens GN=ME2 PE=1 SV=1	MAOM_HUMAN	65	0.025	0.000	0.000	0.000	0.000	0.027	0.009	0.013
10	333	cDNA FLJ56381, highly similar to Dynamin-1-like protein (EC 3.6.5.5) OS=Homo sapiens PE=2 SV=1	B4DYR6_HUMAN (+5)	85	0.013	0.011	0.000	0.000	0.000	0.028	0.008	0.011
11	334	Thyroxine-binding globulin OS=Homo sapiens GN=SERPINA7 PE=1 SV=2	THBG_HUMAN	46	0.000	0.020	0.031	0.000	0.000	0.000	0.008	0.014
12	335	Ras-related C3 botulinum toxin substrate 2 (Rho family, small GTP binding protein Rac2), isoform CRA_a OS=Homo sapiens GN=RAC2 PE=3 SV=1	A0A024R1P2_HUMAN (+5)	21	0.051	0.000	0.000	0.000	0.000	0.000	0.008	0.021
13	336	Collagen alpha-1(VI) chain OS=Homo sapiens GN=COL6A1 PE=1 SV=1	A0A087X0S5_HUMAN (+1)	108	0.020	0.008	0.000	0.000	0.000	0.022	0.008	0.010
14	337	Rho GTPase activating protein OS=Homo sapiens PE=2 SV=1	A9UK01_HUMAN (+1)	75	0.014	0.000	0.000	0.012	0.000	0.024	0.008	0.010
15	338	ATP-citrate synthase OS=Homo sapiens GN=ACLY PE=3 SV=1	A0A024R1T9_HUMAN (+3)	121	0.018	0.008	0.000	0.000	0.000	0.024	0.008	0.010
16	339	Proteoglycan 1, secretory granule, isoform CRA_a OS=Homo sapiens GN=PRG1 PE=4 SV=1	A0A024QZL1_HUMAN (+1)	18	0.000	0.000	0.000	0.000	0.049	0.000	0.008	0.020
17	340	Coatomer subunit alpha OS=Homo sapiens GN=COPA PE=1 SV=2	COPA_HUMAN	138	0.027	0.000	0.000	0.000	0.000	0.021	0.008	0.013
18	341	cDNA FLJ78437, highly similar to Homo sapiens cartilage oligomeric matrix protein (COMP), mRNA OS=Homo sapiens PE=2 SV=1	A8K3IO_HUMAN (+4)	83	0.026	0.000	0.000	0.000	0.000	0.021	0.008	0.012
19	342	Glutathione S-transferase P OS=Homo sapiens GN=GSTP1 PE=1 SV=2	GSTP1_HUMAN (+1)	23	0.046	0.000	0.000	0.000	0.000	0.000	0.008	0.019
20	343	IgG H chain OS=Homo sapiens PE=2 SV=1	S6B2B6_HUMAN	29	0.000	0.000	0.000	0.000	0.046	0.000	0.008	0.019
21	344	Fibulin-1 OS=Homo sapiens PE=2 SV=1	B4DUV1_HUMAN	70	0.000	0.046	0.000	0.000	0.000	0.000	0.008	0.019
22	345	Ras suppressor protein 1 variant 5 OS=Homo sapiens GN=RSU1 PE=4 SV=1	B0YJ73_HUMAN (+1)	26	0.000	0.000	0.000	0.000	0.000	0.045	0.008	0.018
23	346	Integrin alpha-6 OS=Homo sapiens GN=ITGA6 PE=1 SV=5	ITA6_HUMAN	127	0.017	0.000	0.000	0.000	0.000	0.028	0.007	0.012
24	347	PDZ and LIM domain protein 1 OS=Homo sapiens GN=PDLIM1 PE=1 SV=4	PDLI1_HUMAN (+1)	36	0.044	0.000	0.000	0.000	0.000	0.000	0.007	0.018
25	348	Vacuolar protein sorting 35 variant (Fragment) OS=Homo sapiens PE=2 SV=1	Q53FR4_HUMAN (+2)	92	0.012	0.010	0.000	0.010	0.000	0.013	0.007	0.006
26	349	Vasodilator-stimulated phosphoprotein isoform 1 OS=Homo sapiens GN=VASP PE=2 SV=1	A0A024R0V4_HUMAN (+2)	40	0.000	0.000	0.000	0.000	0.000	0.044	0.007	0.018
27	350	Signal transducer and activator of transcription (Fragment) OS=Homo sapiens PE=2 SV=1	Q59H39_HUMAN (+1)	90	0.018	0.000	0.000	0.000	0.000	0.026	0.007	0.012
28	351	Septin 6, isoform CRA_b OS=Homo sapiens GN=SEPT6 PE=1 SV=1	B1AMS2_HUMAN (+9)	49	0.043	0.000	0.000	0.000	0.000	0.000	0.007	0.018
29	352	Insulin-like growth factor-binding protein complex acid labile subunit OS=Homo sapiens GN=IGFALS PE=1 SV=1	ALS_HUMAN (+2)	66	0.000	0.000	0.043	0.000	0.000	0.000	0.007	0.018
30	353	Sushi, von Willebrand factor type A, EGF and pentraxin domain-containing protein 1 OS=Homo sapiens GN=SVEP1 PE=1 SV=1	A0A0A0MSD0_HUMAN (+1)	390	0.038	0.000	0.002	0.000	0.002	0.000	0.007	0.015
31	354	EMILIN-1 OS=Homo sapiens GN=EMILIN1 PE=1 SV=1	A0A0C4DFX3_HUMAN (+1)	107	0.010	0.000	0.000	0.000	0.000	0.033	0.007	0.013
32	355	Ras GTPase-activating protein 3 OS=Homo sapiens GN=RASA3 PE=1 SV=3	RASA3_HUMAN	96	0.000	0.000	0.000	0.000	0.000	0.043	0.007	0.017
33	356	Glycyl-tRNA synthetase OS=Homo sapiens GN=GARS PE=4 SV=1	A0A090N8G0_HUMAN (+1)	78	0.027	0.000	0.000	0.000	0.000	0.015	0.007	0.012
34	357	cDNA FLJ53218, highly similar to Homo sapiens SAC1 suppressor of actin mutations 1-like (SACM1L), mRNA OS=Homo sapiens PE=2 SV=1	B4DVV3_HUMAN (+2)	56	0.000	0.000	0.000	0.000	0.000	0.042	0.007	0.017
35	358	Collagen alpha-3(VI) chain OS=Homo sapiens GN=COL6A3 PE=1 SV=5	CO6A3_HUMAN (+1)	344	0.008	0.004	0.000	0.000	0.004	0.026	0.007	0.010
36	359											

1  
2  
3

4	5	Platelet endothelial cell adhesion molecule OS=Homo sapiens GN=PECAM1 PE=1 SV=1	A0A075B738_HUMAN (+2)	83	0.013	0.000	0.000	0.000	0.028	0.007	0.012	
6	7	Solute carrier family 2, facilitated glucose transporter member 14 OS=Homo sapiens GN=SLC2A14 PE=2 SV=1	GTR14_HUMAN (+1)	56	0.019	0.000	0.000	0.000	0.021	0.007	0.010	
8	9	cDNA FLJ96812, highly similar to Homo sapiens threonyl-tRNA synthetase (TARS), mRNA OS=Homo sapiens PE=1 SV=1	B2RDX5_HUMAN (+2)	82	0.000	0.011	0.000	0.000	0.029	0.007	0.012	
10	11	Serine/threonine-protein phosphatase 2A 65 kDa regulatory subunit A alpha isoform OS=Homo sapiens GN=PPP2R1A PE=1 SV=4	2AAA_HUMAN (+5)	65	0.025	0.014	0.000	0.000	0.000	0.006	0.011	
12	13	UDP-glucose:glycoprotein glucosyltransferase 1 OS=Homo sapiens GN=UGGT1 PE=1 SV=3	UGGG1_HUMAN	177	0.012	0.000	0.000	0.000	0.027	0.006	0.011	
14	15	Serpin peptidase inhibitor, clade A (Alpha- 1 antiproteinase, antitrypsin), member 4, isoform CRA_a OS=Homo sapiens GN=SERPINA4 PE=3 SV=1	A0A024R619_HUMAN (+2)	49	0.000	0.019	0.019	0.000	0.000	0.006	0.010	
16	17	6-phosphogluconate dehydrogenase, decarboxylating OS=Homo sapiens GN=PGD PE=1 SV=3	6PGD_HUMAN (+1)	53	0.020	0.017	0.000	0.000	0.000	0.006	0.010	
18	19	Dynamin-2 OS=Homo sapiens GN=DNM2 PE=1 SV=2	DYN2_HUMAN	98	0.011	0.000	0.000	0.000	0.024	0.006	0.010	
20	21	Myosin light chain kinase, smooth muscle OS=Homo sapiens GN=MYLK PE=1 SV=4	MYLK_HUMAN	211	0.010	0.011	0.000	0.000	0.014	0.006	0.006	
22	23	Calnexin OS=Homo sapiens GN=CANX PE=1 SV=2	CALX_HUMAN	68	0.000	0.000	0.000	0.000	0.035	0.006	0.014	
24	25	Lipoplysaccharide-responsive and beige- like anchor protein OS=Homo sapiens GN=L RBA PE=1 SV=1	E9PEM5_HUMAN	287	0.011	0.000	0.000	0.000	0.023	0.006	0.009	
26	27	Xaa-Pro aminopeptidase 1 OS=Homo sapiens GN=XPNPEP1 PE=1 SV=3	XPP1_HUMAN	70	0.000	0.000	0.000	0.000	0.034	0.006	0.014	
28	29	CD47 OS=Homo sapiens GN=CD47 PE=2 SV=1	A0A0A1TSG4_HUMAN (+1)	32	0.033	0.000	0.000	0.000	0.000	0.006	0.014	
30	31	cDNA FLJ59760, highly similar to 1,4- alpha-glucan branching enzyme (EC 2.4.1.18) OS=Homo sapiens PE=2 SV=1	B4DUF1_HUMAN (+3)	76	0.021	0.012	0.000	0.000	0.000	0.006	0.009	
32	33	Hepatocyte growth factor activator OS=Homo sapiens GN=HGFAC PE=1 SV=1	D6RAR4_HUMAN (+1)	71	0.000	0.019	0.013	0.000	0.000	0.005	0.009	
34	35	cDNA FLJ94267, highly similar to Homo sapiens glutathione S-transferase omega 1 (GSTO1), mRNA OS=Homo sapiens PE=2 SV=1	B2R983_HUMAN (+4)	28	0.000	0.033	0.000	0.000	0.000	0.005	0.013	
36	37	Apolipoprotein A-V, isoform CRA_a OS=Homo sapiens GN=APOA5 PE=4 SV=1	A0A0B4RUS7_HUMAN (+3)	41	0.000	0.000	0.000	0.000	0.032	0.000	0.005	0.013
38	39	Platelet glycoprotein VI OS=Homo sapiens GN=GPI6 PE=1 SV=4	GPVI_HUMAN	37	0.000	0.000	0.000	0.000	0.032	0.005	0.013	
40	41	Aldehyde dehydrogenase family 16 member A1 OS=Homo sapiens GN=ALDH1A1 PE=1 SV=2	A16A1_HUMAN (+3)	85	0.000	0.011	0.000	0.000	0.021	0.005	0.009	
42	43	MHC class I antigen (Fragment) OS=Homo sapiens GN=HLA-A PE=3 SV=1	F6IQV5_HUMAN	38	0.000	0.000	0.000	0.000	0.031	0.005	0.013	
44	45	X-DING-CD4 (Fragment) OS=Homo sapiens PE=2 SV=1	R4H484_HUMAN	30	0.000	0.030	0.000	0.000	0.000	0.005	0.012	
46	47	cDNA FLJ53963, highly similar to Leukocyte elastase inhibitor OS=Homo sapiens PE=2 SV=1	B4E3A8_HUMAN (+2)	39	0.000	0.000	0.000	0.000	0.030	0.005	0.012	
48	49	SLAM family member 5 OS=Homo sapiens GN=CD84 PE=1 SV=1	SLAF5_HUMAN	39	0.000	0.000	0.000	0.000	0.030	0.005	0.012	
50	51	Tyrosine-protein kinase BTK OS=Homo sapiens GN=BTK PE=1 SV=3	BTK_HUMAN	76	0.014	0.000	0.000	0.000	0.015	0.005	0.008	
52	53	ATP synthase subunit alpha, mitochondrial OS=Homo sapiens GN=ATP5A1 PE=1 SV=1	ATPA_HUMAN (+1)	60	0.000	0.000	0.000	0.000	0.029	0.005	0.012	
54	55	Actin related protein 2/3 complex, subunit 1B, 41kDa OS=Homo sapiens GN=ARPC1B PE=2 SV=1	A4D275_HUMAN (+1)	41	0.000	0.000	0.000	0.000	0.029	0.005	0.012	
56	57	Coagulation factor VIII OS=Homo sapiens GN=F8 PE=1 SV=1	FA8_HUMAN	267	0.010	0.000	0.007	0.000	0.011	0.005	0.005	
58	59	ATP synthase subunit beta, mitochondrial OS=Homo sapiens GN=ATP5B PE=1 SV=3	ATPB_HUMAN (+3)	57	0.028	0.000	0.000	0.000	0.005	0.005	0.011	

1  
2  
3

4		cDNA FLJ45348 fis, clone BRHIP3011269, weakly similar to Prenylcysteine oxidase (EC 1.8.3.5) OS=Homo sapiens PE=2 SV=1	B3KXF9_HUMAN (+2)	42	0.000	0.000	0.000	0.000	0.000	0.028	0.005	0.011
5	389	HMHA1 protein (Fragment) OS=Homo sapiens GN=HMHA1 PE=2 SV=1	Q8IYN3_HUMAN	124	0.009	0.000	0.000	0.000	0.000	0.019	0.005	0.008
6	390	Phosphoglucomutase 2 OS=Homo sapiens GN=PGM2 PE=1 SV=4	PGM2_HUMAN	68	0.000	0.000	0.000	0.000	0.000	0.026	0.004	0.011
7	391	Protein 4.1 OS=Homo sapiens GN=EPB41 PE=1 SV=4	41_HUMAN (+2)	97	0.011	0.000	0.015	0.000	0.000	0.000	0.004	0.007
8	392	cDNA FLJ56358, highly similar to Cytosolic nonspecific dipeptidase OS=Homo sapiens PE=2 SV=1	B4DPF1_HUMAN (+2)	42	0.025	0.000	0.000	0.000	0.000	0.000	0.004	0.010
9	393	Fatty acid synthase OS=Homo sapiens GN=FASN PE=1 SV=1	A0A0U1RQF0_HUMAN (+1)	273	0.012	0.000	0.000	0.000	0.000	0.013	0.004	0.006
10	394	Bromodomain adjacent to zinc finger domain protein 2B OS=Homo sapiens GN=BAZ2B PE=1 SV=3	BAZ2B_HUMAN	240	0.009	0.000	0.000	0.000	0.000	0.015	0.004	0.006
11	395	Acyl-coenzyme A oxidase OS=Homo sapiens GN=ACOX1 PE=3 SV=1	A0A024R8L7_HUMAN (+2)	75	0.000	0.000	0.000	0.000	0.000	0.024	0.004	0.010
12	396	ARP3 actin-related protein 3 homolog (Yeast), isoform CRA_a OS=Homo sapiens GN=ACTR3 PE=3 SV=1	A0A024RAI1_HUMAN (+3)	47	0.023	0.000	0.000	0.000	0.000	0.000	0.004	0.009
13	397	Hypoxia up-regulated protein 1 OS=Homo sapiens GN=HYOU1 PE=1 SV=1	A0A087X054_HUMAN (+2)	105	0.000	0.000	0.000	0.000	0.000	0.022	0.004	0.009
14	398	Coatomer subunit beta' OS=Homo sapiens GN=COPB2 PE=1 SV=2	COPB2_HUMAN	102	0.010	0.000	0.000	0.000	0.000	0.012	0.004	0.006
15	399	Nck-associated protein 1 OS=Homo sapiens GN=NCKAP1 PE=1 SV=1	NCKP1_HUMAN	129	0.008	0.000	0.000	0.000	0.000	0.014	0.004	0.006
16	400	Carboxypeptidase B2 OS=Homo sapiens GN=CPB2 PE=1 SV=1	A0A087WSY5_HUMAN (+1)	44	0.000	0.000	0.022	0.000	0.000	0.000	0.004	0.009
17	401	ADAM metallopeptidase domain 10, isoform CRA_b OS=Homo sapiens GN=ADAM10 PE=4 SV=1	A0A024R5U5_HUMAN (+1)	84	0.000	0.000	0.000	0.000	0.000	0.021	0.003	0.009
18	402	Complement factor properdin isoform 1 (Fragment) OS=Homo sapiens GN=CFP PE=2 SV=1	A0A0S2Z4I5_HUMAN (+1)	51	0.021	0.000	0.000	0.000	0.000	0.000	0.003	0.009
19	403	Neurobeachin-like protein 2 OS=Homo sapiens GN=NBEAL2 PE=1 SV=2	NBEL2_HUMAN	303	0.005	0.000	0.000	0.000	0.000	0.016	0.003	0.006
20	404	Collagen alpha-2(VI) chain OS=Homo sapiens GN=COL6A2 PE=1 SV=4	CO6A2_HUMAN	109	0.010	0.000	0.000	0.000	0.000	0.011	0.003	0.005
21	405	cDNA FLJ61564, highly similar to Plexin domain-containing protein 2 OS=Homo sapiens PE=2 SV=1	B4E367_HUMAN (+1)	58	0.000	0.000	0.000	0.000	0.000	0.020	0.003	0.008
22	406	Kinesin-like protein KIF2A OS=Homo sapiens GN=KIF2A PE=1 SV=3	KIF2A_HUMAN	80	0.020	0.000	0.000	0.000	0.000	0.000	0.003	0.008
23	407	Protein kinase C substrate 80K-H, isoform CRA_a OS=Homo sapiens GN=PRKCSH PE=4 SV=1	A0A024R7F1_HUMAN (+5)	59	0.000	0.000	0.000	0.000	0.000	0.020	0.003	0.008
24	408	Coronin OS=Homo sapiens GN=CORO1B PE=3 SV=1	A0A024R5K1_HUMAN (+5)	54	0.020	0.000	0.000	0.000	0.000	0.000	0.003	0.008
25	409	T-complex protein 1 subunit beta OS=Homo sapiens GN=CCT2 PE=1 SV=2	F5GWF6_HUMAN (+3)	57	0.019	0.000	0.000	0.000	0.000	0.000	0.003	0.008
26	410	cDNA FLJ76863, highly similar to Homo sapiens stress-induced-phosphoprotein 1 (Hsp70/Hsp90-organizing protein) (STIP1), mRNA OS=Homo sapiens PE=2 SV=1	A8K690_HUMAN (+2)	63	0.000	0.000	0.000	0.000	0.000	0.019	0.003	0.008
27	411	Laminin, gamma 1 (Formerly LAMB2), isoform CRA_a OS=Homo sapiens GN=LAMC1 PE=4 SV=1	A0A024R972_HUMAN (+1)	174	0.006	0.000	0.000	0.000	0.005	0.007	0.003	0.003
28	412	Coagulation factor IX OS=Homo sapiens GN=F9 p22 PE=2 SV=1	F2RM37_HUMAN (+1)	52	0.000	0.018	0.000	0.000	0.000	0.000	0.003	0.007
29	413	Heparanase, isoform CRA_a OS=Homo sapiens GN=HPSE PE=4 SV=1	A0A024RDB8_HUMAN (+2)	61	0.017	0.000	0.000	0.000	0.000	0.000	0.003	0.007
30	414	cDNA FLJ95309, highly similar to Homo sapiens adenosine monophosphate deaminase 2 (isoform L)(AMPD2), mRNA OS=Homo sapiens PE=2 SV=1	B2RB47_HUMAN	101	0.000	0.000	0.000	0.000	0.000	0.017	0.003	0.007
31	415	cDNA FLJ50778, highly similar to Protein flightless-1 homolog OS=Homo sapiens PE=2 SV=1	B4DIX0_HUMAN (+1)	141	0.000	0.000	0.000	0.000	0.000	0.017	0.003	0.007
32	416	Type 1 tumor necrosis factor receptor shedding aminopeptidase regulator, isoform CRA_a OS=Homo sapiens GN=ARTS-1 PE=4 SV=1	A0A024RAR8_HUMAN (+13)	107	0.000	0.000	0.000	0.000	0.000	0.016	0.003	0.007
33	417	Phospholipid transfer protein, isoform CRA_c OS=Homo sapiens GN=PLTP PE=2 SV=1	B3KUE5_HUMAN (+2)	57	0.000	0.016	0.000	0.000	0.000	0.000	0.003	0.007
34	418											

1  
2  
3

4	HLA-B associated transcript 5, isoform CRA_b OS=Homo sapiens GN=ABHD16A PE=1 SV=1	A0A0G2JJ3_HUMAN (+2)	68	0.016	0.000	0.000	0.000	0.000	0.000	0.003	0.006
5	Signal transducer and activator of transcription OS=Homo sapiens PE=2 SV=1	B4DNP0_HUMAN (+4)	76	0.000	0.000	0.000	0.000	0.000	0.015	0.003	0.006
6	ATPase Ca++ transporting cardiac muscle slow twitch 2 isoform 1 (Fragment) OS=Homo sapiens GN=ATP2A2 PE=2 SV=1	A0A0S2Z3L2_HUMAN (+2)	115	0.000	0.000	0.000	0.000	0.000	0.015	0.003	0.006
7	Glycerol-3-phosphate dehydrogenase (Fragment) OS=Homo sapiens GN=GPD2 PE=3 SV=1	Q53T76_HUMAN	77	0.000	0.000	0.000	0.000	0.000	0.015	0.003	0.006
8	N-acylaminoacyl-peptide hydrolase, isoform CRA_b OS=Homo sapiens GN=APEH PE=4 SV=1	A0A024R2U9_HUMAN (+2)	81	0.000	0.000	0.000	0.000	0.000	0.015	0.002	0.006
9	Malic enzyme OS=Homo sapiens PE=2 SV=1	A8K168_HUMAN (+1)	64	0.000	0.014	0.000	0.000	0.000	0.000	0.002	0.006
10	Integrin alpha-2 OS=Homo sapiens GN=ITGA2 PE=1 SV=1	ITA2_HUMAN	129	0.000	0.000	0.000	0.000	0.000	0.014	0.002	0.006
11	cDNA FLJ78440, highly similar to Human lactoferrin OS=Homo sapiens PE=2 SV=1	A8K494_HUMAN (+8)	78	0.014	0.000	0.000	0.000	0.000	0.000	0.002	0.006
12	cDNA FLJ55918, highly similar to Echinoderm microtubule-associated protein-like 2 OS=Homo sapiens PE=2 SV=1	B7Z2F5_HUMAN (+2)	87	0.000	0.000	0.000	0.000	0.000	0.014	0.002	0.006
13	NHL repeat-containing protein 2 OS=Homo sapiens GN=NHLRC2 PE=1 SV=1	NHLC2_HUMAN	79	0.013	0.000	0.000	0.000	0.000	0.000	0.002	0.006
14	Coagulation factor XII OS=Homo sapiens GN=F12 PE=4 SV=1	A0A0R7FJH5_HUMAN (+2)	68	0.000	0.013	0.000	0.000	0.000	0.000	0.002	0.005
15	Aconitate hydratase, mitochondrial OS=Homo sapiens GN=ACO2 PE=1 SV=1	A2A274_HUMAN (+7)	88	0.000	0.000	0.000	0.000	0.000	0.013	0.002	0.005
16	Carnitine palmitoyltransferase 1A (Liver), isoform CRA_a OS=Homo sapiens GN=CPT1A PE=3 SV=1	A0A024R5F4_HUMAN (+2)	88	0.000	0.000	0.000	0.000	0.000	0.013	0.002	0.005
17	cDNA FLJ50510, highly similar to Heat shock 70 kDa protein 4 OS=Homo sapiens PE=2 SV=1	B4DH02_HUMAN (+3)	94	0.000	0.000	0.000	0.000	0.000	0.013	0.002	0.005
18	Prolow-density lipoprotein receptor-related protein 1 OS=Homo sapiens GN=LRP1 PE=1 SV=2	LRP1_HUMAN	505	0.004	0.002	0.000	0.000	0.003	0.003	0.002	0.002
19	Cytoplasmic aconitate hydratase OS=Homo sapiens GN=ACO1 PE=1 SV=3	ACOC_HUMAN (+1)	98	0.000	0.000	0.000	0.000	0.000	0.012	0.002	0.005
20	cDNA FLJ77762, highly similar to Homo sapiens cullin-associated and neddylation- dissociated 1 (CAND1), mRNA OS=Homo sapiens PE=2 SV=1	A8K8U1_HUMAN (+1)	136	0.012	0.000	0.000	0.000	0.000	0.000	0.002	0.005
21	Phosphatidylinositol-glycan-specific phospholipase D OS=Homo sapiens GN=GPLD1 PE=1 SV=3	PHLD_HUMAN	92	0.000	0.000	0.010	0.000	0.000	0.000	0.002	0.004
22	cDNA FLJ51067, highly similar to DNA damage-binding protein 1 OS=Homo sapiens PE=2 SV=1	B4DSA8_HUMAN (+3)	112	0.010	0.000	0.000	0.000	0.000	0.000	0.002	0.004
23	Spectrin beta chain, non-erythrocytic 2 OS=Homo sapiens GN=SPTBN2 PE=1 SV=3	SPTN2_HUMAN	271	0.000	0.000	0.009	0.000	0.000	0.000	0.001	0.004
24	Epididymis luminal protein 102 OS=Homo sapiens GN=SPTBN1 PE=2 SV=1	B2ZZ89_HUMAN (+2)	275	0.000	0.000	0.000	0.000	0.009	0.001	0.003	
25	Dynactin subunit 1 OS=Homo sapiens GN=DCTN1 PE=1 SV=3	DCTN1_HUMAN (+2)	142	0.000	0.000	0.000	0.000	0.008	0.001	0.003	
26	Laminin subunit beta-1 OS=Homo sapiens GN=LAMB1 PE=1 SV=1	G3XAI2_HUMAN (+1)	200	0.000	0.000	0.000	0.000	0.007	0.000	0.001	0.003
27	Cytoplasmic dynein 1 heavy chain 1 OS=Homo sapiens GN=DYNC1H1 PE=1 SV=5	DYHC1_HUMAN	532	0.006	0.000	0.000	0.000	0.000	0.000	0.001	0.002
28	Tenascin-X OS=Homo sapiens GN=TNXB PE=1 SV=1	A0A087X0I0_HUMAN (+2)	213	0.000	0.000	0.000	0.000	0.006	0.001	0.002	
29	Hornatin OS=Homo sapiens GN=HRNR PE=1 SV=2	HORN_HUMAN	282	0.000	0.000	0.000	0.003	0.000	0.000	0.001	0.001
30	Hemicentin-1 OS=Homo sapiens GN=HMCN1 PE=1 SV=2	HMCN1_HUMAN	613	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.001

## Supporting Table 4

**Table S4: Blood-circulation proteome analysis.** Full list of proteins identified in plasma samples recovered from 6 ovarian carcinoma patients (across all samples).

#	Identified Proteins	Accession Number	MW	RPA% (P1)	RPA% (P2)	RPA% (P3)	RPA% (P4)	RPA% (P5)	RPA% (P6)	Average RPA%	Standard Deviation
1	Serum albumin OS=Homo sapiens GN=ALB PE=1 SV=2	ALBU_HUMAN	69	5.712	8.072	7.063	9.004	7.367	14.689	8.651	3.154
2	Putative uncharacterized protein DKFZp686C11235 OS=Homo sapiens GN=DKFZp686C11235 PE=1 SV=1	Q6MZV7_HUMAN	52	2.575	3.134	2.616	3.189	2.506	2.863	2.814	0.295
3	IGH@ protein OS=Homo sapiens GN=IGH@ PE=1 SV=1	Q6GMX6_HUMAN	51	2.195	2.551	2.253	2.503	2.837	2.488	2.471	0.230
4	Putative uncharacterized protein DKFZp686I04196 (Fragment) OS=Homo sapiens GN=DKFZp686I04196 PE=1 SV=1	Q6N093_HUMAN	46	2.030	3.134	2.077	2.659	2.218	2.532	2.442	0.421
5	Ig gamma-1 chain C region OS=Homo sapiens GN=IGHG1 PE=1 SV=1	A0A087WV47_HUMAN (+1)	51	2.220	2.459	2.184	2.455	2.746	2.424	2.415	0.202
6	cDNA FLJ78387 OS=Homo sapiens PE=1 SV=1	A8K008_HUMAN	52	2.283	2.420	2.142	2.473	2.702	2.451	2.412	0.189
7	Transferrin variant (Fragment) OS=Homo sapiens PE=2 SV=1	Q53H26_HUMAN	77	1.810	2.250	1.807	2.637	2.602	2.911	2.336	0.459
8	Putative uncharacterized protein DKFZp686C15213 OS=Homo sapiens GN=DKFZp686C15213 PE=1 SV=1	Q6MZU6_HUMAN	51	1.855	2.855	1.890	2.408	1.928	2.187	2.187	0.390
9	Haptoglobin OS=Homo sapiens GN=HP PE=1 SV=4	H0Y300_HUMAN	49	2.319	1.639	2.471	1.875	2.006	2.433	2.124	0.336
10	Putative uncharacterized protein DKFZp686G11190 OS=Homo sapiens GN=DKFZp686G11190 PE=1 SV=1	Q6MZQ6_HUMAN	52	1.860	2.023	1.820	2.110	2.399	1.976	2.031	0.209
11	Ig gamma-3 chain C region OS=Homo sapiens GN=IGHG3 PE=4 SV=1	A0A087WXL8_HUMAN	57	1.808	2.290	1.776	2.273	1.676	2.274	2.016	0.291
12	Haptoglobin (Fragment) OS=Homo sapiens GN=HP PE=1 SV=1	H3BS21_HUMAN	25	2.332	1.540	2.289	1.508	1.744	2.461	1.979	0.429
13	Fibrinogen alpha chain OS=Homo sapiens GN=FGA PE=1 SV=2	FIBA_HUMAN	95	1.819	1.720	2.368	2.092	1.694	2.035	1.955	0.260
14	Ig gamma-1 chain C region OS=Homo sapiens GN=IGHG1 PE=1 SV=1	A0A087WYC5_HUMAN	52	2.120	2.330	2.083	2.362	2.613	0.000	1.918	0.959
15	Complement C3 OS=Homo sapiens GN=C3 PE=1 SV=2	C03_HUMAN (+1)	187	1.927	2.207	1.820	1.536	1.835	1.889	1.869	0.216
16	Alpha-2-macroglobulin OS=Homo sapiens GN=A2M PE=1 SV=3	A2MG_HUMAN	163	1.514	1.740	1.007	1.667	2.265	1.715	1.651	0.406
17	Fibrinogen beta chain OS=Homo sapiens GN=FGB PE=1 SV=2	FIBB_HUMAN (+1)	56	1.441	1.291	1.667	1.537	1.259	1.707	1.484	0.187
18	Lambda-chain (AA -20 to 215) OS=Homo sapiens PE=1 SV=1	A2NUT2_HUMAN	25	1.284	1.446	1.479	1.489	1.169	1.362	1.372	0.126
19	IGL@ protein OS=Homo sapiens GN=IGL@ PE=2 SV=1	Q6PIQ7_HUMAN	25	1.234	1.465	1.550	1.392	1.113	1.340	1.349	0.158
20	IGL@ protein OS=Homo sapiens GN=IGL@ PE=1 SV=1	Q8N355_HUMAN	25	1.267	1.446	1.444	1.431	1.132	1.340	1.343	0.126
21	Protein IGHV3-72 OS=Homo sapiens GN=IGHV3-72 PE=4 SV=1	A0A087WW89_HUMAN	11	1.421	1.195	1.161	1.538	1.265	1.199	1.296	0.150
22	cDNA FLJ14473 fis, clone MAMMA1001080, highly similar to Homo sapiens SNC73 protein (SNC73) mRNA OS=Homo sapiens PE=2 SV=1	Q96K68_HUMAN	53	1.172	1.630	1.096	1.286	0.980	1.337	1.250	0.226
23	Alpha-1-antitrypsin OS=Homo sapiens GN=SERPINA1 PE=1 SV=3	A1AT_HUMAN (+1)	47	1.402	1.339	0.965	1.173	1.283	1.169	1.222	0.156
24	Putative uncharacterized protein DKFZp686P15220 OS=Homo sapiens GN=DKFZp686P15220 PE=1 SV=1	Q6N089_HUMAN	52	2.120	2.348	0.000	0.000	2.622	0.000	1.182	1.304
25	Ig gamma-4 chain C region OS=Homo sapiens GN=IGHG4 PE=1 SV=1	IGHG4_HUMAN (+1)	36	1.127	1.370	0.905	1.061	1.494	1.099	1.176	0.216
26	Haptoglobin-related protein OS=Homo sapiens GN=HPR PE=1 SV=2	HPTR_HUMAN	39	1.376	1.048	1.287	0.992	1.035	1.183	1.153	0.155
27	IgG H chain OS=Homo sapiens PE=1 SV=1	S6B291_HUMAN	51	2.137	0.000	2.115	0.000	2.664	0.000	1.153	1.278
28	Fibrinogen gamma chain OS=Homo sapiens GN=FGG PE=1 SV=3	FIBG_HUMAN	52	1.056	0.984	1.287	1.162	0.972	1.109	1.095	0.119
29	Ig G L chain OS=Homo sapiens PE=1 SV=1	S6BGD6_HUMAN	25	1.048	1.165	1.215	1.180	0.890	1.033	1.088	0.122
30	Ig mu chain C region OS=Homo sapiens GN=IGHM PE=1 SV=1	A0A087X2C0_HUMAN	64	0.937	0.903	1.107	1.065	1.536	0.764	1.052	0.267

4	31	Immunoglobulin heavy chain variant (Fragment) OS=Homo sapiens PE=2 SV=1	Q9NPP6_HUMAN	45	0.967	1.325	0.910	0.999	0.866	1.086	1.026	0.165
5	32	Hemopexin OS=Homo sapiens GN=HPX PE=1 SV=2	HEMO_HUMAN	52	0.894	1.102	1.075	0.948	0.865	1.225	1.018	0.139
6	33	IgG H chain OS=Homo sapiens PE=2 SV=1	S6BGE0_HUMAN	32	1.162	1.247	1.059	1.103	1.043	0.000	0.936	0.464
7	34	Apolipoprotein B (Including Ag(X) antigen) OS=Homo sapiens GN=APOB PE=4 SV=1	C0JYY2_HUMAN	516	0.736	1.033	0.672	0.840	1.211	0.942	0.906	0.199
8	35	Ig mu chain C region OS=Homo sapiens GN=IGHM PE=1 SV=1	A0A087WYJ9_HUMAN	66	0.877	0.904	1.101	1.048	1.497	0.000	0.904	0.496
9	36	Epididymis tissue protein Li 173 OS=Homo sapiens PE=2 SV=1	E9KL26_HUMAN (+1)	55	1.014	0.990	0.776	0.765	0.902	0.879	0.888	0.104
10	37	IGL@ protein OS=Homo sapiens GN=IGL@ PE=1 SV=1	Q6PIK1_HUMAN	25	0.828	0.883	1.004	1.025	0.668	0.879	0.881	0.130
11	38	Myosin-reactive immunoglobulin heavy chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	Q9UL88_HUMAN	14	1.328	0.772	0.692	1.036	0.596	0.824	0.875	0.267
12	39	IGK@ protein OS=Homo sapiens GN=IGK@ PE=1 SV=1	Q6PIL8_HUMAN	26	0.780	0.993	0.897	0.837	0.910	0.676	0.849	0.111
13	40	Ig gamma-1 chain C region OS=Homo sapiens GN=IGHG1 PE=1 SV=1	A0A087X1C7_HUMAN	50	0.000	0.000	2.148	0.000	2.699	0.000	0.808	1.264
14	41	cDNA FLJ53691, highly similar to Serotransferrin OS=Homo sapiens PE=2 SV=1	B4E1B2_HUMAN	75	1.870	0.000	0.000	2.746	0.000	0.000	0.769	1.224
15	42	Ig gamma-1 chain C region OS=Homo sapiens GN=IGHG1 PE=1 SV=1	A0A087X079_HUMAN	52	2.161	0.000	0.000	2.399	0.000	0.000	0.760	1.180
16	43	Epididymis secretory protein Li 51 OS=Homo sapiens GN=HEL-S-51 PE=2 SV=1	V9HWI6_HUMAN (+1)	53	0.630	0.682	0.581	0.648	0.543	0.974	0.676	0.154
17	44	Kininogen 1, isoform CRA_a OS=Homo sapiens GN=KNG1 PE=4 SV=1	D3DNU8_HUMAN	48	0.493	0.587	0.688	0.584	0.580	0.858	0.632	0.127
18	45	Plasminogen OS=Homo sapiens GN=PLG PE=1 SV=2	PLMN_HUMAN	91	0.613	0.578	0.542	0.473	0.571	1.008	0.631	0.191
19	46	Alpha-2 globin chain OS=Homo sapiens GN=HBA2 PE=3 SV=1	D1MGQ2_HUMAN (+2)	15	0.253	0.657	1.379	0.548	0.495	0.330	0.610	0.404
20	47	Vitronectin OS=Homo sapiens GN=VTN PE=4 SV=1	D9ZGG2_HUMAN (+1)	54	0.634	0.557	0.660	0.537	0.558	0.692	0.606	0.064
21	48	Inter-alpha (Globulin) inhibitor H4 (Plasma Kallikrein-sensitive glycoprotein) OS=Homo sapiens GN=ITIH4 PE=2 SV=1	B2RMS9_HUMAN (+1)	103	0.578	0.675	0.603	0.530	0.698	0.533	0.603	0.071
22	49	Complement C4-B OS=Homo sapiens GN=C4B PE=1 SV=2	CO4B_HUMAN	193	0.560	0.749	0.586	0.441	0.613	0.666	0.603	0.104
23	50	Alpha-1-acid glycoprotein 1 OS=Homo sapiens GN=ORM1 PE=1 SV=1	A1AG1_HUMAN (+1)	24	0.792	0.528	0.715	0.544	0.406	0.504	0.582	0.144
24	51	Inter-alpha-trypsin inhibitor heavy chain H2 OS=Homo sapiens GN=ITIH2 PE=1 SV=1	Q5T985_HUMAN	105	0.539	0.599	0.495	0.529	0.663	0.659	0.581	0.071
25	52	Complement factor H OS=Homo sapiens GN=CFH PE=1 SV=4	CFAH_HUMAN	139	0.538	0.530	0.557	0.390	0.574	0.830	0.570	0.143
26	53	Ig kappa chain V-III region WOL OS=Homo sapiens PE=1 SV=1	KV305_HUMAN	12	0.493	0.626	0.404	0.604	0.541	0.595	0.544	0.084
27	54	Complement C4-A OS=Homo sapiens GN=C4A PE=1 SV=2	CO4A_HUMAN	193	0.552	0.749	0.591	0.000	0.598	0.646	0.523	0.265
28	55	Inter-alpha-trypsin inhibitor heavy chain H1 OS=Homo sapiens GN=ITIH1 PE=1 SV=3	ITIH1_HUMAN	101	0.489	0.590	0.466	0.469	0.652	0.451	0.520	0.082
29	56	CP protein OS=Homo sapiens GN=CP PE=2 SV=1	A5PL27_HUMAN (+1)	122	0.381	0.620	0.476	0.472	0.566	0.572	0.514	0.087
30	57	cDNA FLJ35730 fis, clone TESTI2003131, highly similar to ALPHA-1- ANTICHYMOTRYPSIN OS=Homo sapiens PE=2 SV=1	B3KS79_HUMAN	51	0.646	0.562	0.518	0.379	0.546	0.399	0.508	0.102
31	58	IBM-B2 heavy chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	A0A125QYY9_HUMAN	14	0.422	0.570	0.472	0.587	0.563	0.392	0.501	0.084
32	59	Prothrombin OS=Homo sapiens GN=F2 PE=1 SV=2	THR2_HUMAN	70	0.416	0.429	0.296	0.435	0.384	0.738	0.450	0.150
33	60	Myosin-reactive immunoglobulin heavy chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	Q9UL90_HUMAN	12	0.669	0.509	0.367	0.483	0.309	0.275	0.435	0.147
34	61	Putative uncharacterized protein DKFZp686L19235 OS=Homo sapiens GN=DKFZp686L19235 PE=2 SV=1	Q6MZV6_HUMAN	52	0.886	0.000	0.838	0.000	0.803	0.000	0.421	0.462
35	62	Alpha-1B-glycoprotein OS=Homo sapiens GN=A1BG PE=1 SV=4	A1BG_HUMAN (+1)	54	0.391	0.487	0.399	0.233	0.421	0.498	0.405	0.095
36	63	APOB protein OS=Homo sapiens GN=APOB PE=2 SV=1	Q7Z7Q0_HUMAN	92	0.000	0.000	0.000	1.030	0.000	1.290	0.387	0.605
37	64	Heparin cofactor 2 OS=Homo sapiens GN=SERPIND1 PE=1 SV=3	HEP2_HUMAN	57	0.378	0.379	0.332	0.441	0.415	0.357	0.384	0.039
38	65	cDNA FLJ93914, highly similar to Homo sapiens histidine-rich glycoprotein (HRG), mRNA OS=Homo sapiens PE=2 SV=1	B2R8I2_HUMAN	60	0.437	0.368	0.367	0.298	0.332	0.449	0.375	0.058

1												
2												
3												
4												
5	66	Apolipoprotein A-I, isoform CRA_a OS=Homo sapiens GN=APOA1 PE=4 SV=1	A0A024R3E3_HUMAN (+1)	31	0.313	0.364	0.284	0.421	0.509	0.319	0.368	0.084
6	67	Myosin-reactive immunoglobulin light chain variable region (Fragment) OS=Homo sapiens PE=1 SV=1	Q9UL83_HUMAN	12	0.317	0.352	0.330	0.524	0.271	0.366	0.360	0.087
7	68	Hemoglobin, beta OS=Homo sapiens GN=HBB PE=3 SV=1	D9YZU5_HUMAN (+1)	16	0.079	0.411	0.880	0.393	0.377	0.000	0.357	0.311
8	69	Uncharacterized protein OS=Homo sapiens PE=2 SV=1	B4E1Z4_HUMAN	141	0.333	0.350	0.375	0.309	0.293	0.471	0.355	0.064
9	70	Uncharacterized protein OS=Homo sapiens PE=2 SV=1	Q8NEJ1_HUMAN	25	1.031	0.000	0.000	0.000	0.000	1.077	0.351	0.544
10	71	Beta-2-glycoprotein I (Fragment) OS=Homo sapiens PE=2 SV=1	D9IWP9_HUMAN	36	0.293	0.313	0.281	0.215	0.271	0.641	0.336	0.153
11	72	Anti-FactorVIII scFv (Fragment) OS=Homo sapiens PE=2 SV=1	A2KBC6_HUMAN	25	0.355	0.376	0.370	0.387	0.352	0.132	0.329	0.097
12	73	Transthyretin OS=Homo sapiens PE=2 SV=1	A6XGL1_HUMAN (+2)	20	0.169	0.188	0.374	0.556	0.348	0.330	0.327	0.141
13	74	Fibronectin 1, isoform CRA_n OS=Homo sapiens GN=FN1PE=4 SV=1	A0A024R462_HUMAN	259	0.334	0.181	0.369	0.226	0.398	0.378	0.314	0.089
14	75	cDNA FLJ56954, highly similar to Inter-alpha-trypsin inhibitor heavy chain H1 OS=Homo sapiens PE=2 SV=1	B7Z539_HUMAN	72	0.510	0.000	0.520	0.000	0.715	0.000	0.291	0.327
15	76	C4b-binding protein alpha chain OS=Homo sapiens GN=C4BPA PE=1 SV=2	C4BPA_HUMAN	67	0.202	0.294	0.151	0.180	0.201	0.689	0.286	0.203
16	77	MS-D4 heavy chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	A0A0X9UWK7_HUMAN	14	0.332	0.268	0.346	0.242	0.331	0.196	0.286	0.060
17	78	GCT-A10 heavy chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	A0A120HG46_HUMAN	14	0.392	0.000	0.566	0.000	0.629	0.000	0.265	0.300
18	79	Serpin peptidase inhibitor, clade C (Antithrombin), member 1, isoform CRA_a OS=Homo sapiens GN=SERPINC1 PE=3 SV=1	A0A024R944_HUMAN (+1)	53	0.255	0.239	0.241	0.283	0.280	0.259	0.260	0.019
19	80	cDNA FLJ53025, highly similar to Complement C4-B OS=Homo sapiens PE=2 SV=1	B7Z1F8_HUMAN	30	0.000	1.534	0.000	0.000	0.000	0.000	0.256	0.626
20	81	Protein IGHV3-74 (Fragment) OS=Homo sapiens GN=IGHV3-74 PE=1 SV=1	A0A0B4J1X5_HUMAN	13	0.357	0.253	0.339	0.223	0.357	0.000	0.255	0.137
21	82	Protein SAA2-SAA4 OS=Homo sapiens GN=SAA2-SAA4 PE=4 SV=1	A0A096LPE2_HUMAN	23	0.275	0.286	0.306	0.294	0.101	0.263	0.254	0.077
22	83	IGL@ protein OS=Homo sapiens GN=IGL@ PE=1 SV=1	Q8N5F4_HUMAN	25	0.000	0.000	1.514	0.000	0.000	0.000	0.252	0.618
23	84	A30 (Fragment) OS=Homo sapiens PE=4 SV=1	A2MYE1_HUMAN (+1)	10	0.211	0.470	0.220	0.290	0.186	0.110	0.248	0.123
24	85	Protein AMBP OS=Homo sapiens GN=AMBP PE=1 SV=1	AMBP_HUMAN	39	0.217	0.229	0.271	0.161	0.214	0.394	0.248	0.080
25	86	Ig lambda-7 chain C region OS=Homo sapiens GN=IGLC7 PE=1 SV=2	LAC7_HUMAN	11	0.000	1.452	0.000	0.000	0.000	0.000	0.242	0.593
26	87	Complement C5 OS=Homo sapiens GN=C5 PE=1 SV=4	C05_HUMAN	188	0.234	0.270	0.255	0.201	0.234	0.240	0.239	0.023
27	88	Apolipoprotein A-II OS=Homo sapiens GN=APOA2 PE=1 SV=1	APOA2_HUMAN (+1)	11	0.269	0.213	0.240	0.308	0.379	0.000	0.235	0.129
28	89	Gelsolin OS=Homo sapiens GN=GSN PE=1 SV=1	GELS_HUMAN	86	0.182	0.137	0.184	0.292	0.243	0.275	0.219	0.061
29	90	cDNA FLJ55606, highly similar to Alpha-2-HS-glycoprotein OS=Homo sapiens PE=2 SV=1	B7Z8Q2_HUMAN (+2)	47	0.144	0.220	0.178	0.267	0.178	0.304	0.215	0.061
30	91	Insulin-like growth factor-binding protein complex acid labile subunit OS=Homo sapiens GN=IGFALS PE=1 SV=1	ALS_HUMAN (+1)	66	0.198	0.178	0.253	0.212	0.232	0.208	0.214	0.026
31	92	Histidine-rich glycoprotein OS=Homo sapiens GN=HRG PE=1 SV=1	HRG_HUMAN	60	0.000	0.415	0.382	0.000	0.000	0.467	0.211	0.232
32	93	Actin, cytoplasmic 1 OS=Homo sapiens GN=ACTB PE=1 SV=1	ACTB_HUMAN (+2)	42	0.272	0.179	0.241	0.368	0.077	0.105	0.207	0.109
33	94	Ig heavy chain V-III region GAL OS=Homo sapiens PE=1 SV=1	HV320_HUMAN	13	0.000	0.433	0.000	0.409	0.392	0.000	0.206	0.226
34	95	Complement factor H-related protein 1 OS=Homo sapiens GN=CFHR1 PE=1 SV=2	FHR1_HUMAN	38	0.289	0.210	0.324	0.000	0.000	0.405	0.205	0.170
35	96	Complement component 9, isoform CRA_a OS=Homo sapiens GN=C9 PE=4 SV=1	A0A024R035_HUMAN (+1)	63	0.221	0.268	0.189	0.161	0.118	0.218	0.196	0.052
36	97	N-acetyl muramoyl-L-alanine amidase OS=Homo sapiens GN=PGLYRP2 PE=1 SV=1	PGRP2_HUMAN	62	0.191	0.212	0.149	0.203	0.180	0.230	0.194	0.028
37	98	cDNA FLJ94213, highly similar to Homo sapiens pregnancy-zone protein (PZP), mRNA OS=Homo sapiens PE=2 SV=1	B2R950_HUMAN (+1)	164	0.188	0.235	0.156	0.139	0.257	0.184	0.193	0.045
38	99	GCT-A4 light chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	A0A0X9T7V9_HUMAN	12	0.176	0.157	0.147	0.201	0.193	0.229	0.184	0.030
39	100	Apolipoprotein A-IV OS=Homo sapiens GN=APOA4 PE=1 SV=3	APOA4_HUMAN	45	0.094	0.115	0.205	0.247	0.155	0.244	0.177	0.066
40	101	Inter-alpha-trypsin inhibitor heavy chain H3 OS=Homo sapiens GN=ITIH3 PE=1 SV=2	ITIH3_HUMAN	100	0.241	0.244	0.176	0.111	0.190	0.093	0.176	0.063

1  
2  
3

4	102	MS-D1 light chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	A0A0X9TD47_HUMAN	12	0.000	0.235	0.220	0.322	0.271	0.000	0.175	0.140
5	103	Apolipoprotein E OS=Homo sapiens GN=APOE PE=1 SV=1	APOE_HUMAN (+1)	36	0.141	0.183	0.159	0.188	0.167	0.198	0.173	0.021
6	104	Uncharacterized protein OS=Homo sapiens PE=2 SV=1	A0A5E4_HUMAN	25	1.031	0.000	0.000	0.000	0.000	0.000	0.172	0.421
7	105	Apolipoprotein D OS=Homo sapiens GN=APOD PE=1 SV=1	APOD_HUMAN	21	0.161	0.112	0.147	0.184	0.177	0.235	0.169	0.041
8	106	Zinc-alpha-2-glycoprotein OS=Homo sapiens GN=AZGP1 PE=1 SV=2	ZA2G_HUMAN	34	0.174	0.152	0.207	0.185	0.082	0.210	0.168	0.048
9	107	IGL@ protein OS=Homo sapiens GN=IGL@ PE=2 SV=1	Q567P1_HUMAN	25	0.997	0.000	0.000	0.000	0.000	0.000	0.166	0.407
10	108	Immunglobulin heavy chain variable region (Fragment) OS=Homo sapiens PE=4 SV=1	Q0ZCH6_HUMAN	14	0.211	0.134	0.126	0.242	0.166	0.118	0.166	0.050
11	109	Coagulation factor XII OS=Homo sapiens GN=F12 PE=1 SV=3	FA12_HUMAN (+1)	68	0.155	0.138	0.129	0.142	0.157	0.259	0.163	0.048
12	110	Alpha-2-antiplasmin OS=Homo sapiens GN=SERPINF2 PE=1 SV=3	A2AP_HUMAN	55	0.154	0.154	0.160	0.149	0.143	0.210	0.162	0.024
13	111	GCT-A5 light chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	A0A0X9UWL5_HUMAN	12	0.317	0.352	0.293	0.000	0.000	0.000	0.160	0.177
14	112	Complement component C6 OS=Homo sapiens GN=C6 PE=1 SV=3	CO6_HUMAN	105	0.177	0.165	0.134	0.115	0.168	0.194	0.159	0.029
15	113	Serum amyloid P-component OS=Homo sapiens GN=APCS PE=1 SV=2	SAMP_HUMAN (+1)	25	0.203	0.188	0.141	0.116	0.130	0.176	0.159	0.035
16	114	Complement component C8 gamma chain OS=Homo sapiens GN=C8G PE=1 SV=3	CO8G_HUMAN	22	0.211	0.171	0.160	0.176	0.042	0.175	0.156	0.058
17	115	Alpha-1-acid glycoprotein 2 OS=Homo sapiens GN=ORM2 PE=1 SV=2	A1AG2_HUMAN	24	0.141	0.196	0.220	0.101	0.116	0.137	0.152	0.047
18	116	Serum paraoxonase/arylesterase 1 OS=Homo sapiens GN=PON1 PE=1 SV=3	PON1_HUMAN	40	0.106	0.141	0.121	0.169	0.139	0.233	0.152	0.045
19	117	Complement component 1, q subcomponent, B chain, isoform CRA_a OS=Homo sapiens GN=C1QB PE=4 SV=1	A0A024RAB9_HUMAN (+3)	27	0.125	0.157	0.114	0.161	0.120	0.224	0.150	0.041
20	118	Uncharacterized protein OS=Homo sapiens PE=1 SV=1	Q8TCDO_HUMAN	26	0.000	0.000	0.000	0.874	0.000	0.000	0.146	0.357
21	119	Retinol binding protein 4, plasma, isoform CRA_b OS=Homo sapiens GN=RBP4 PE=1 SV=2	Q5VY30_HUMAN (+2)	23	0.129	0.061	0.153	0.168	0.121	0.239	0.145	0.059
22	120	IGL@ protein OS=Homo sapiens GN=IGL@ PE=1 SV=1	Q5FWF9_HUMAN	25	0.000	0.000	0.863	0.000	0.000	0.000	0.144	0.352
23	121	Complement component 1, q subcomponent, C chain, isoform CRA_a OS=Homo sapiens GN=C1QC PE=4 SV=1	A0A024RAA7_HUMAN (+1)	26	0.114	0.163	0.169	0.112	0.089	0.190	0.139	0.040
24	122	HCG40889, isoform CRA_b OS=Homo sapiens GN=hCG_40889 PE=4 SV=1	A0A024R962_HUMAN	139	0.000	0.000	0.000	0.000	0.000	0.834	0.139	0.340
25	123	GCT-A5 heavy chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	A0A0X9T0H6_HUMAN	12	0.458	0.000	0.367	0.000	0.000	0.000	0.137	0.215
26	124	Complement component C8 alpha chain OS=Homo sapiens GN=C8A PE=1 SV=2	CO8A_HUMAN	65	0.175	0.152	0.135	0.112	0.121	0.127	0.137	0.023
27	125	Vitamin K-dependent protein S OS=Homo sapiens GN=PROS1 PE=1 SV=1	PROS_HUMAN (+2)	75	0.141	0.175	0.088	0.084	0.179	0.139	0.134	0.041
28	126	Afamin OS=Homo sapiens GN=AFM PE=1 SV=1	AFAM_HUMAN	69	0.073	0.102	0.057	0.112	0.188	0.271	0.134	0.081
29	127	Plasma kallikrein heavy chain (Fragment) OS=Homo sapiens GN=KLKB1 PE=3 SV=1	H0YAC1_HUMAN	77	0.082	0.098	0.120	0.113	0.157	0.221	0.132	0.050
30	128	Complement C1r subcomponent OS=Homo sapiens GN=C1R PE=2 SV=1	B4DPQ0_HUMAN	82	0.113	0.155	0.113	0.112	0.102	0.181	0.129	0.031
31	129	CD5 antigen-like OS=Homo sapiens GN=CD5L PE=1 SV=1	CD5L_HUMAN	38	0.122	0.111	0.127	0.089	0.122	0.202	0.129	0.038
32	130	GCT-A8 heavy chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	A0A0X9V9C4_HUMAN	13	0.227	0.000	0.237	0.000	0.000	0.296	0.127	0.141
33	131	Complement C1s subcomponent OS=Homo sapiens GN=C1S PE=1 SV=1	C1S_HUMAN	77	0.104	0.140	0.103	0.107	0.133	0.164	0.125	0.025
34	132	Complement component 8, beta polypeptide, isoform CRA_b OS=Homo sapiens GN=C8B PE=2 SV=1	B7Z550_HUMAN (+4)	60	0.120	0.110	0.125	0.105	0.100	0.165	0.121	0.023
35	133	cDNA FLJ78207, highly similar to Human complement protein component C7 mRNA OS=Homo sapiens PE=2 SV=1	A8K2T4_HUMAN (+1)	93	0.141	0.146	0.099	0.068	0.080	0.189	0.121	0.046
36	134	Ig heavy chain V-III region WEA OS=Homo sapiens PE=1 SV=1	HV302_HUMAN	12	0.211	0.000	0.293	0.201	0.000	0.000	0.118	0.133
37	135	Carboxypeptidase B2 OS=Homo sapiens GN=CPB2 PE=4 SV=1	A0A087WSY5_HUMAN (+1)	44	0.086	0.128	0.100	0.143	0.116	0.125	0.116	0.020
38	136	Lumican OS=Homo sapiens GN=LUM PE=1 SV=2	LUM_HUMAN (+1)	38	0.100	0.124	0.116	0.127	0.098	0.116	0.113	0.012
39	137	Vitamin D-binding protein OS=Homo sapiens GN=Gc PE=1 SV=1	D6RF35_HUMAN	53	0.000	0.000	0.665	0.000	0.000	0.000	0.111	0.271

1		Rheumatoid factor G9 light chain (Fragment) OS=Homo sapiens GN=V<lambda>3 PE=2 SV=1	A0N5G3_HUMAN	13	0.000	0.000	0.643	0.000	0.000	0.000	0.107	0.263
2	138	Protein IGLV8-61 (Fragment) OS=Homo sapiens GN=IGLV8-61 PE=4 SV=2	A0A075B6I0_HUMAN (+1)	13	0.325	0.000	0.169	0.149	0.000	0.000	0.107	0.132
3	139	Apolipoprotein C-III OS=Homo sapiens GN=APOC3 PE=2 SV=1	A3KPE2_HUMAN (+2)	11	0.077	0.085	0.120	0.176	0.084	0.100	0.107	0.037
4	140	Protein IGLV2-11 (Fragment) OS=Homo sapiens GN=IGLV2-11 PE=4 SV=1	A0A075B6K3_HUMAN (+1)	13	0.260	0.000	0.373	0.000	0.000	0.000	0.105	0.167
5	141	Protein IGHV3-13 (Fragment) OS=Homo sapiens GN=IGHV3-13 PE=4 SV=1	A0A0A0MS11_HUMAN	13	0.227	0.217	0.000	0.186	0.000	0.000	0.105	0.116
6	142	Keratin 1 OS=Homo sapiens GN=KRT1 PE=3 SV=1	H6VRF8_HUMAN (+3)	66	0.141	0.107	0.093	0.059	0.176	0.042	0.103	0.050
7	143	Cryocystalglobulin CC1 kappa light chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	B1N7B8_HUMAN	12	0.141	0.000	0.000	0.282	0.193	0.000	0.103	0.121
8	144	Clusterin OS=Homo sapiens GN=CLU PE=1 SV=1	CLUS_HUMAN	52	0.097	0.099	0.110	0.074	0.089	0.116	0.098	0.015
9	145	Protein IGKV2D-24 (Fragment) OS=Homo sapiens GN=IGKV2D-24 PE=4 SV=1	A0A075B6R9_HUMAN (+1)	13	0.065	0.072	0.000	0.149	0.214	0.085	0.097	0.074
10	146	Leucine-rich alpha-2-glycoprotein OS=Homo sapiens GN=HMFT1766 PE=2 SV=1	Q68CK4_HUMAN	38	0.111	0.111	0.104	0.115	0.085	0.058	0.097	0.022
11	147	Ig heavy chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	A0A068LKQ2_HUMAN	13	0.000	0.144	0.135	0.074	0.107	0.085	0.091	0.052
12	148	Pigment epithelium-derived factor OS=Homo sapiens GN=SERPINF1 PE=1 SV=4	PEDF_HUMAN	46	0.092	0.061	0.096	0.116	0.060	0.119	0.091	0.025
13	149	Immunoglobulin J chain OS=Homo sapiens GN=IGJ PE=1 SV=4	IGJ_HUMAN	18	0.047	0.000	0.098	0.161	0.103	0.122	0.089	0.057
14	150	Keratin, type I cytoskeletal 10 OS=Homo sapiens GN=KRT10 PE=1 SV=6	K1C10_HUMAN	59	0.129	0.111	0.082	0.025	0.134	0.047	0.088	0.045
15	151	Complement C2 OS=Homo sapiens GN=C2 PE=1 SV=2	CO2_HUMAN (+3)	83	0.000	0.000	0.127	0.122	0.123	0.152	0.087	0.069
16	152	GCT-A1 heavy chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	A0A125U0V2_HUMAN	14	0.000	0.000	0.000	0.518	0.000	0.000	0.086	0.211
17	153	IgG H chain OS=Homo sapiens PE=2 SV=1	S6B2B6_HUMAN	29	0.000	0.000	0.516	0.000	0.000	0.000	0.086	0.211
18	154	Keratin, type II cytoskeletal 2 epidermal OS=Homo sapiens GN=KRT2 PE=1 SV=2	K22E_HUMAN	65	0.097	0.116	0.075	0.037	0.143	0.000	0.078	0.052
19	155	APOL1 protein (Fragment) OS=Homo sapiens GN=APOL1 PE=2 SV=1	A5PL32_HUMAN (+2)	49	0.078	0.077	0.045	0.109	0.114	0.045	0.078	0.030
20	156	Angiotensinogen variant (Fragment) OS=Homo sapiens PE=2 SV=1	Q53GY3_HUMAN (+3)	53	0.064	0.044	0.042	0.073	0.096	0.104	0.070	0.026
21	157	Protein IGHV3-73 (Fragment) OS=Homo sapiens GN=IGHV3-73 PE=1 SV=1	A0A0B4J1V6_HUMAN	9	0.000	0.000	0.000	0.000	0.412	0.000	0.069	0.168
22	158	Rheumatoid factor C6 light chain (Fragment) OS=Homo sapiens GN=V<kappa>1 PE=2 SV=1	A0N5G1_HUMAN	13	0.195	0.108	0.000	0.000	0.107	0.000	0.068	0.081
23	159	Thyroxine-binding globulin OS=Homo sapiens GN=SERPINA7 PE=1 SV=2	THBG_HUMAN	46	0.073	0.092	0.048	0.084	0.071	0.036	0.067	0.021
24	160	Carboxypeptidase N subunit 2 OS=Homo sapiens GN=CPN2 PE=1 SV=3	CPN2_HUMAN	61	0.062	0.069	0.043	0.048	0.084	0.081	0.065	0.017
25	161	Ficolin-3 OS=Homo sapiens GN=FCN3 PE=1 SV=2	FCN3_HUMAN	33	0.077	0.057	0.053	0.073	0.056	0.067	0.064	0.010
26	162	Complement factor I OS=Homo sapiens GN=CFI PE=1 SV=2	CFAI_HUMAN (+2)	66	0.032	0.064	0.047	0.029	0.056	0.142	0.062	0.041
27	163	IgG L chain OS=Homo sapiens PE=2 SV=1	S6AWF4_HUMAN	20	0.000	0.000	0.000	0.363	0.000	0.000	0.060	0.148
28	164	Carboxypeptidase N catalytic chain OS=Homo sapiens GN=CPN1 PE=1 SV=1	CBPN_HUMAN	52	0.049	0.081	0.051	0.074	0.054	0.053	0.060	0.014
29	165	VH6DJ protein (Fragment) OS=Homo sapiens GN=VH6DJ PE=2 SV=1	A2NOT1_HUMAN	13	0.000	0.217	0.000	0.000	0.143	0.000	0.060	0.096
30	166	Keratin, type I cytoskeletal 9 OS=Homo sapiens GN=KRT9 PE=1 SV=3	K1C9_HUMAN	62	0.055	0.083	0.057	0.031	0.112	0.018	0.059	0.034
31	167	Coagulation factor V OS=Homo sapiens GN=F5 PE=4 SV=1	A0A0A0MRJ7_HUMAN (+1)	252	0.064	0.071	0.054	0.046	0.070	0.048	0.059	0.011
32	168	Ig heavy chain V-III region BUT OS=Homo sapiens PE=1 SV=1	HV306_HUMAN	12	0.000	0.000	0.110	0.242	0.000	0.000	0.059	0.100
33	169	Galectin-3-binding protein OS=Homo sapiens GN=LGALS3BP PE=1 SV=1	LG3BP_HUMAN (+1)	65	0.117	0.072	0.041	0.022	0.036	0.051	0.056	0.034
34	170	V1-2 protein (Fragment) OS=Homo sapiens GN=V1-2 PE=4 SV=1	A2MYD6_HUMAN	10	0.338	0.000	0.000	0.000	0.000	0.000	0.056	0.138
35	171	Serpin peptidase inhibitor, clade A (Alpha-1 antiproteinase, antitrypsin), member 4, isoform CRA_a OS=Homo sapiens GN=SERPINA4 PE=3 SV=1	A0A024R6I9_HUMAN (+2)	49	0.043	0.067	0.036	0.079	0.076	0.034	0.056	0.021
36	172	V1-22 protein (Fragment) OS=Homo sapiens GN=V1-22 PE=1 SV=1	Q5NV88_HUMAN	11	0.000	0.000	0.000	0.176	0.000	0.150	0.054	0.084
37	173	Thrombospondin-1 OS=Homo sapiens GN=THBS1 PE=1 SV=2	TSP1_HUMAN	129	0.039	0.062	0.065	0.075	0.054	0.021	0.053	0.019

1  
2  
3

4	175	MS-F1 light chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	A0A0X9V9B3_HUMAN	12	0.000	0.078	0.073	0.081	0.077	0.000	0.052	0.040
5	176	Coagulation factor XIII B chain OS=Homo sapiens GN=F13B PE=1 SV=3	F13B_HUMAN	76	0.039	0.025	0.064	0.032	0.055	0.094	0.051	0.025
6	177	V1-13 protein (Fragment) OS=Homo sapiens GN=V1-13 PE=4 SV=1	Q5NV69_HUMAN	10	0.211	0.000	0.000	0.000	0.093	0.000	0.051	0.087
7	178	Talin-1 OS=Homo sapiens GN=TLN1 PE=1 SV=3	TLN1_HUMAN	270	0.095	0.031	0.070	0.088	0.005	0.010	0.050	0.040
8	179	Lipoprotein, Lp(A) OS=Homo sapiens GN=LPA PE=1 SV=1	Q1HP67_HUMAN	227	0.000	0.112	0.138	0.000	0.016	0.012	0.046	0.062
9	180	Lipopolysaccharide-binding protein OS=Homo sapiens GN=LBP PE=1 SV=3	LBP_HUMAN (+1)	53	0.040	0.062	0.058	0.055	0.026	0.031	0.045	0.015
10	181	Myosin-reactive immunoglobulin heavy chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	Q9UL89_HUMAN	13	0.000	0.000	0.271	0.000	0.000	0.000	0.045	0.111
11	182	Complement factor H-related protein 3 OS=Homo sapiens GN=CFHR3 PE=1 SV=2	FHR3_HUMAN	37	0.148	0.000	0.000	0.000	0.000	0.119	0.045	0.070
12	183	cDNA, FLJ94361, highly similar to Homo sapiens serine (or cysteine) proteinase inhibitor, clade A(alpha-1 antiproteinase, antitrypsin), member 6 (SERPINA6), mRNA OS=Homo sapiens PE=2 SV=1	B2R9F2_HUMAN (+1)	45	0.019	0.083	0.020	0.043	0.052	0.037	0.042	0.024
13	184	Carbonic anhydrase 1 OS=Homo sapiens GN=CA1 PE=1 SV=2	CAH1_HUMAN (+1)	29	0.000	0.065	0.152	0.033	0.000	0.000	0.042	0.060
14	185	Hyaluronan-binding protein 2 OS=Homo sapiens GN=HABP2 PE=1 SV=1	HABP2_HUMAN	63	0.034	0.030	0.014	0.023	0.029	0.096	0.038	0.029
15	186	Protein IGHV5-51 (Fragment) OS=Homo sapiens GN=IGHV5-51 PE=1 SV=1	A0A0C4DH38_HUMAN	13	0.000	0.072	0.000	0.000	0.143	0.000	0.036	0.060
16	187	Serpin peptidase inhibitor, clade A (Alpha-1 antiproteinase, antitrypsin), member 10, isoform CRA_b OS=Homo sapiens GN=SERPINA10 PE=3 SV=1	A0A024R6I6_HUMAN (+3)	51	0.050	0.064	0.017	0.038	0.045	0.000	0.036	0.023
17	188	Glyceraldehyde-3-phosphate dehydrogenase OS=Homo sapiens GN=GAPDH PE=1 SV=3	G3P_HUMAN (+1)	36	0.035	0.039	0.061	0.067	0.000	0.000	0.034	0.029
18	189	Anti-HER3 scFv (Fragment) OS=Homo sapiens PE=2 SV=1	A2J422_HUMAN	26	0.000	0.000	0.085	0.112	0.000	0.000	0.033	0.051
19	190	Phosphatidylinositol-glycan-specific phospholipase D OS=Homo sapiens GN=GPLD1 PE=1 SV=3	PHLD_HUMAN	92	0.018	0.031	0.024	0.021	0.055	0.036	0.031	0.014
20	191	Coagulation factor XIII A chain OS=Homo sapiens GN=F13A1 PE=1 SV=4	F13A_HUMAN	83	0.046	0.000	0.037	0.041	0.022	0.033	0.030	0.017
21	192	Attractin OS=Homo sapiens GN=ATRN PE=1 SV=2	ATRN_HUMAN	159	0.016	0.050	0.011	0.018	0.044	0.031	0.028	0.016
22	193	Single-chain Fv (Fragment) OS=Homo sapiens GN=scFv PE=1 SV=1	Q65ZC9_HUMAN	26	0.146	0.000	0.000	0.000	0.000	0.000	0.024	0.060
23	194	Myosin-reactive immunoglobulin light chain variable region (Fragment) OS=Homo sapiens PE=1 SV=1	Q9UL70_HUMAN	12	0.000	0.000	0.000	0.000	0.000	0.137	0.023	0.056
24	195	cDNA FLJ60461, highly similar to Peroxiredoxin-2 (EC 1.11.1.15) OS=Homo sapiens PE=2 SV=1	B4DF70_HUMAN (+2)	20	0.000	0.000	0.132	0.000	0.000	0.000	0.022	0.054
25	196	Serpin peptidase inhibitor, clade A (Alpha-1 antiproteinase, antitrypsin), member 5, isoform CRA_a OS=Homo sapiens GN=SERPINA5 PE=3 SV=1	A0A024R6N9_HUMAN (+1)	46	0.000	0.000	0.019	0.032	0.020	0.048	0.020	0.018
26	197	Extracellular matrix protein 1 OS=Homo sapiens GN=ECM1 PE=1 SV=2	ECM1_HUMAN	61	0.014	0.000	0.022	0.040	0.000	0.036	0.019	0.017
27	198	Complement C1r subcomponent-like protein OS=Homo sapiens GN=C1RL PE=1 SV=2	C1RL_HUMAN	53	0.024	0.000	0.033	0.027	0.026	0.000	0.018	0.015
28	199	V2-19 protein (Fragment) OS=Homo sapiens GN=V2-19 PE=4 SV=1	Q5NV91_HUMAN	10	0.000	0.000	0.000	0.000	0.000	0.110	0.018	0.045
29	200	Myosin, heavy polypeptide 9, non-muscle, isoform CRA_a OS=Homo sapiens GN=MYH9 PE=4 SV=1	A0A024R1N1_HUMAN (+1)	227	0.035	0.008	0.004	0.062	0.000	0.000	0.018	0.025
30	201	Fibulin-1 OS=Homo sapiens PE=2 SV=1	B4DUV1_HUMAN	70	0.030	0.040	0.019	0.000	0.020	0.000	0.018	0.016
31	202	Ig heavy chain V-III region GA OS=Homo sapiens PE=1 SV=1	HV308_HUMAN	13	0.000	0.108	0.000	0.000	0.000	0.000	0.018	0.044
32	203	Filamin-A OS=Homo sapiens GN=FLNA PE=1 SV=4	FLNA_HUMAN	281	0.032	0.013	0.022	0.040	0.000	0.000	0.018	0.016
33	204	Coagulation factor IX OS=Homo sapiens GN=F9 p22 PE=2 SV=1	F2RM37_HUMAN (+1)	52	0.024	0.000	0.000	0.000	0.027	0.053	0.017	0.021
34	205	Complement component 1, q subcomponent, A chain, isoform CRA_a OS=Homo sapiens GN=C1QA PE=4 SV=1	A0A024RAG6_HUMAN (+2)	26	0.049	0.054	0.000	0.000	0.000	0.000	0.017	0.027
35	206	Coagulation factor XI OS=Homo sapiens GN=F11 PE=1 SV=1	FA11_HUMAN	70	0.012	0.013	0.025	0.021	0.000	0.031	0.017	0.011
36	207	Apolipoprotein M OS=Homo sapiens GN=APOM PE=1 SV=2	APOM_HUMAN	21	0.101	0.000	0.000	0.000	0.000	0.000	0.017	0.041

4	208	Ig heavy chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	A0A068LRW6_HUMAN (+2)	14	0.000	0.000	0.000	0.000	0.099	0.000	0.017	0.041
5	209	Hepatocyte growth factor activator OS=Homo sapiens GN=HGFAC PE=1 SV=1	HGFA_HUMAN	71	0.024	0.020	0.019	0.014	0.000	0.023	0.017	0.009
6	210	HCG1782423 (Fragment) OS=Homo sapiens GN=IGLV2-18 PE=4 SV=1	A0A075B6J9_HUMAN (+1)	13	0.097	0.000	0.000	0.000	0.000	0.000	0.016	0.040
7	211	Fibulin-1 OS=Homo sapiens GN=FBLN1 PE=1 SV=4	FBLN1_HUMAN	77	0.016	0.024	0.017	0.019	0.012	0.000	0.015	0.008
8	212	Complement factor H-related protein 2 OS=Homo sapiens GN=CFHR2 PE=1 SV=1	FHR2_HUMAN (+1)	31	0.000	0.000	0.000	0.000	0.000	0.089	0.015	0.036
9	213	Fetuin-B OS=Homo sapiens GN=FETUB PE=1 SV=2	FETUB_HUMAN	42	0.000	0.022	0.000	0.000	0.022	0.039	0.014	0.016
10	214	A0A0F7TC28_HUMAN	A0A0F7TC28_HUMAN	11	0.000	0.000	0.080	0.000	0.000	0.000	0.013	0.033
11	215	Properdin OS=Homo sapiens GN=CFP PE=1 SV=2	PROP_HUMAN (+1)	51	0.000	0.018	0.017	0.000	0.000	0.043	0.013	0.017
12	216	Ig heavy chain V-III region CAM OS=Homo sapiens PE=1 SV=1	HV307_HUMAN	14	0.000	0.000	0.000	0.000	0.000	0.078	0.013	0.032
13	217	Ig kappa chain V-I region DEE OS=Homo sapiens PE=1 SV=1	KV105_HUMAN	12	0.000	0.000	0.000	0.000	0.077	0.000	0.013	0.032
14	218	Sex hormone-binding globulin OS=Homo sapiens GN=SHBG PE=4 SV=1	I3L145_HUMAN (+1)	37	0.023	0.025	0.000	0.026	0.000	0.000	0.012	0.014
15	219	Alpha-synuclein OS=Homo sapiens GN=SNCA PE=1 SV=1	E7EPV7_HUMAN (+3)	12	0.000	0.000	0.073	0.000	0.000	0.000	0.012	0.030
16	220	Sulfhydryl oxidase 1 OS=Homo sapiens GN=QSOX1 PE=1 SV=3	QSOX1_HUMAN	83	0.010	0.017	0.011	0.017	0.017	0.000	0.012	0.007
17	221	C-reactive protein OS=Homo sapiens GN=CRP PE=1 SV=1	CRP_HUMAN	25	0.034	0.038	0.000	0.000	0.000	0.000	0.012	0.018
18	222	Peptidase inhibitor 16 OS=Homo sapiens GN=PI16 PE=1 SV=1	PI16_HUMAN	49	0.017	0.000	0.000	0.020	0.000	0.034	0.012	0.014
19	223	Fermitin family homolog 3 OS=Homo sapiens GN=FERMT3 PE=1 SV=1	URP2_HUMAN	76	0.044	0.012	0.012	0.000	0.000	0.000	0.011	0.017
20	224	IBM-A3 heavy chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	A0A0X9UWM4_HUMAN	14	0.000	0.000	0.000	0.000	0.066	0.000	0.011	0.027
21	225	Catalase OS=Homo sapiens GN=CAT PE=1 SV=3	CATA_HUMAN	60	0.000	0.000	0.066	0.000	0.000	0.000	0.011	0.027
22	226	Ficolin-2 OS=Homo sapiens GN=FCN2 PE=1 SV=2	FCN2_HUMAN	34	0.000	0.000	0.000	0.028	0.000	0.032	0.010	0.016
23	227	Carbonic anhydrase 2 OS=Homo sapiens GN=CA2 PE=1 SV=2	CAH2_HUMAN (+2)	29	0.000	0.000	0.061	0.000	0.000	0.000	0.010	0.025
24	228	Cartilage acidic protein 1 OS=Homo sapiens GN=CRTAC1 PE=1 SV=2	CRAC1_HUMAN (+1)	71	0.012	0.013	0.012	0.020	0.000	0.000	0.010	0.008
25	229	Vinculin, isoform CRA_c OS=Homo sapiens GN=VCL PE=4 SV=1	A0A024QZN4_HUMAN (+2)	117	0.022	0.000	0.011	0.025	0.000	0.000	0.010	0.011
26	230	cDNA FLJ51023, highly similar to Vitamin K-dependent protein C (EC 3.4.21.69) OS=Homo sapiens PE=2 SV=1	B4DPC8_HUMAN (+4)	31	0.027	0.000	0.000	0.000	0.030	0.000	0.010	0.015
27	231	von Willebrand factor OS=Homo sapiens GN=WVF PE=1 SV=4	VWF_HUMAN	309	0.019	0.005	0.031	0.000	0.000	0.000	0.009	0.013
28	232	cDNA FLJ78437, highly similar to Homo sapiens cartilage oligomeric matrix protein (COMP), mRNA OS=Homo sapiens PE=2 SV=1	A8K3I0_HUMAN (+4)	83	0.015	0.000	0.000	0.000	0.011	0.026	0.009	0.011
29	233	Conserved oligomeric Golgi complex subunit 3 OS=Homo sapiens GN=COG3 PE=1 SV=3	COG3_HUMAN	94	0.000	0.000	0.037	0.015	0.000	0.000	0.009	0.015
30	234	Macrophage stimulating 1 (Hepatocyte growth factor-like) variant (Fragment) OS=Homo sapiens PE=2 SV=1	Q53GN8_HUMAN	80	0.021	0.018	0.000	0.000	0.000	0.014	0.009	0.010
31	235	Zyxin OS=Homo sapiens GN=ZYX PE=1 SV=1	ZYX_HUMAN	61	0.028	0.000	0.000	0.016	0.000	0.000	0.007	0.012
32	236	Proteoglycan 4, isoform CRA_a OS=Homo sapiens GN=PRG4 PE=4 SV=1	A0A024R930_HUMAN (+2)	151	0.000	0.012	0.006	0.000	0.012	0.011	0.007	0.006
33	237	Butyrylcholinesterase, isoform CRA_b OS=Homo sapiens GN=BCHE PE=3 SV=1	D3DNN4_HUMAN	73	0.000	0.000	0.012	0.013	0.013	0.000	0.006	0.007
34	238	cDNA FLJ78503, highly similar to Homo sapiens keratin 13 (KRT13), transcript variant 1, mRNA OS=Homo sapiens PE=2 SV=1	A8K2H9_HUMAN	50	0.000	0.038	0.000	0.000	0.000	0.000	0.006	0.015
35	239	Keratin, type II cytoskeletal 5 OS=Homo sapiens GN=KRT5 PE=1 SV=3	K2C5_HUMAN	62	0.000	0.000	0.000	0.000	0.037	0.000	0.006	0.015
36	240	Extracellular link domain containing 1 OS=Homo sapiens GN=XLKD1 PE=2 SV=1	B2R672_HUMAN (+1)	35	0.000	0.000	0.000	0.000	0.000	0.031	0.005	0.013
37	241	Stomatin, isoform CRA_a OS=Homo sapiens GN=STOM PE=4 SV=1	A0A024R882_HUMAN (+2)	32	0.000	0.000	0.000	0.030	0.000	0.000	0.005	0.012
38	242	Pyruvate kinase PKM OS=Homo sapiens GN=PKM PE=1 SV=4	KPYM_HUMAN (+1)	58	0.029	0.000	0.000	0.000	0.000	0.000	0.005	0.012
39	243	Mannosyl-oligosaccharide 1,2-alpha-mannosidase IA OS=Homo sapiens GN=MAN1A1 PE=1 SV=3	MA1A1_HUMAN	73	0.012	0.000	0.000	0.000	0.000	0.015	0.004	0.007

1  
 2  
 3  
 4  
 5  
 6  
 7  
 8  
 9  
 10  
 11  
 12  
 13  
 14  
 15  
 16  
 17  
 18  
 19  
 20  
 21  
 22  
 23  
 24  
 25  
 26  
 27  
 28  
 29  
 30  
 31  
 32  
 33  
 34  
 35  
 36  
 37  
 38  
 39  
 40  
 41  
 42  
 43  
 44  
 45  
 46  
 47  
 48  
 49  
 50  
 51  
 52  
 53  
 54  
 55  
 56  
 57  
 58  
 59  
 60  
 61  
 62  
 63  
 64  
 65

244	Transforming growth factor-beta-induced protein Ig-h3 OS=Homo sapiens GN=TGFBI PE=1 SV=1	BGH3_HUMAN (+1)	75	0.000	0.000	0.000	0.013	0.012	0.000	0.004	0.007
245	Vitamin K-dependent protein Z OS=Homo sapiens GN=PROZ PE=1 SV=2	PROZ_HUMAN	45	0.000	0.000	0.000	0.000	0.000	0.024	0.004	0.010
246	Integrin alpha-IIb OS=Homo sapiens GN=ITGA2B PE=1 SV=3	ITA2B_HUMAN	113	0.007	0.000	0.000	0.013	0.000	0.000	0.003	0.006
247	Actinin, alpha 1, isoform CRA_a OS=Homo sapiens GN=ACTN1 PE=4 SV=1	A0A024R694_HUMAN (+1)	103	0.008	0.000	0.000	0.009	0.000	0.000	0.003	0.005
248	Moesin OS=Homo sapiens GN=MSN PE=1 SV=3	MOES_HUMAN (+1)	68	0.000	0.000	0.000	0.014	0.000	0.000	0.002	0.006
249	Biotinidase OS=Homo sapiens GN=BTD PE=1 SV=2	BTD_HUMAN	61	0.014	0.000	0.000	0.000	0.000	0.000	0.002	0.006
250	Band 3 anion transport protein OS=Homo sapiens GN=SLC4A1 PE=1 SV=3	B3AT_HUMAN (+3)	102	0.000	0.000	0.013	0.000	0.000	0.000	0.002	0.005
251	Epididymis secretory protein Li 52 OS=Homo sapiens GN=HEL-S-52 PE=2 SV=1	V9HWG7_HUMAN (+1)	66	0.013	0.000	0.000	0.000	0.000	0.000	0.002	0.005
252	Dopamine beta-hydroxylase OS=Homo sapiens GN=DBH PE=1 SV=3	DOPO_HUMAN	69	0.000	0.000	0.013	0.000	0.000	0.000	0.002	0.005
253	Integrin beta-3 OS=Homo sapiens GN=ITGB3 PE=1 SV=2	ITB3_HUMAN (+1)	87	0.000	0.000	0.000	0.011	0.000	0.000	0.002	0.005
254	IgGFc-binding protein OS=Homo sapiens GN=FCGBP PE=1 SV=3	FCGBP_HUMAN	572	0.001	0.003	0.002	0.002	0.000	0.003	0.002	0.001
255	Mannan-binding lectin serine protease 1 OS=Homo sapiens GN=MASP1 PE=1 SV=3	MASP1_HUMAN	79	0.011	0.000	0.000	0.000	0.000	0.000	0.002	0.004
256	Spectrin alpha chain, erythrocytic 1 OS=Homo sapiens GN=SPTA1 PE=1 SV=1	A0A087WZE4_HUMAN (+1)	281	0.000	0.000	0.005	0.000	0.000	0.000	0.001	0.002
257	Ankyrin-1 OS=Homo sapiens GN=ANK1 PE=1 SV=3	ANK1_HUMAN	206	0.000	0.000	0.004	0.000	0.000	0.000	0.001	0.002
258	Spectrin, beta, erythrocytic (Includes spherocytosis, clinical type I) variant (Fragment) OS=Homo sapiens PE=2 SV=1	Q59FP5_HUMAN	268	0.000	0.000	0.003	0.000	0.000	0.000	0.001	0.001

## Supporting Table 5

**Table S5: Characterization of the *in vivo* protein corona.** Full list of common proteins identified in the liposomal protein corona in all 6 ovarian carcinoma patients.

#	Identified protein	Accession Number	Average RPA%	STV
1	Full-length cDNA clone CS0DD006YL02 of Neuroblastoma of Homo sapiens (human) OS=Homo sapiens PE=2 SV=1	Q86TT1_HUMAN	7.98	2.44
2	Ig mu chain C region OS=Homo sapiens GN=IGHM PE=1 SV=1	A0A087X2C0_HUMAN	5.70	1.78
3	Alpha-2-macroglobulin OS=Homo sapiens GN=A2M PE=1 SV=3	A2MG_HUMAN	3.47	1.01
4	Fibrinogen beta chain OS=Homo sapiens GN=FGB PE=1 SV=2	FIBB_HUMAN (+1)	3.46	1.20
5	Fibrinogen alpha chain OS=Homo sapiens GN=FGA PE=1 SV=2	FIBA_HUMAN	2.99	0.67
6	Apolipoprotein B (Including Ag(X) antigen) OS=Homo sapiens GN=APOB PE=4 SV=1	C0JYY2_HUMAN	2.64	1.43
7	Serum albumin OS=Homo sapiens GN=ALB PE=1 SV=2	ALBU_HUMAN	2.48	2.08
8	ProteinIGHV3-72 OS=Homo sapiens GN=IGHV3-72 PE=4 SV=1	A0A087WW89_HUMAN	1.91	0.57
9	C4b-binding protein alpha chain OS=Homo sapiens GN=C4BPA PE=1 SV=2	C4BPA_HUMAN	1.74	0.59
10	Fibrinogen gamma chain OS=Homo sapiens GN=FGG PE=1 SV=3	FIBG_HUMAN	1.60	0.54
11	Haptoglobin (Fragment) OS=Homo sapiens GN=HP PE=1 SV=1	H3BS21_HUMAN	1.36	0.35
12	Haptoglobin OS=Homo sapiens GN=HP PE=1 SV=4	H0Y300_HUMAN	1.35	0.44
13	IGH@ protein OS=Homo sapiens GN=IGH@ PE=1 SV=1	Q6GMX6_HUMAN	1.14	0.65
14	Ig gamma-1 chain C region OS=Homo sapiens GN=IGHG1 PE=1 SV=1	A0A087WV47_HUMAN (+1)	1.13	0.60
15	cDNA FLJ78387 OS=Homo sapiens PE=1 SV=1	A8K008_HUMAN	1.12	0.60
16	Putative uncharacterized protein DKFZp686P15220 OS=Homo sapiens GN=DKFZp686P15220 PE=1 SV=1	Q6N089_HUMAN	1.06	0.61
17	IgG H chain OS=Homo sapiens PE=1 SV=1	S6B291_HUMAN	1.05	0.65
18	Actin, cytoplasmic 1 OS=Homo sapiens GN=ACTB PE=1 SV=1	ACTB_HUMAN (+2)	1.04	0.60
19	Ig gamma-1 chain C region OS=Homo sapiens GN=IGHG1 PE=1 SV=1	A0A087WYC5_HUMAN	0.96	0.63
20	GCT-A10 heavy chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	A0A120HG46_HUMAN	0.96	0.51
21	cDNA FLJ14473 fis, clone MAMMA1001080, highly similar to Homo sapiens SNC73 protein (SNC73) mRNA OS=Homo sapiens PE=2 SV=1	Q96K68_HUMAN	0.94	0.30
22	Haptoglobin-related protein OS=Homo sapiens GN=HPR PE=1 SV=2	HPTR_HUMAN	0.93	0.22
23	Putative uncharacterized protein DKFZp686G11190 OS=Homo sapiens GN=DKFZp686G11190 PE=1 SV=1	Q6MZQ6_HUMAN	0.92	0.61
24	Myosin-reactive immunoglobulin heavy chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	Q9UL90_HUMAN	0.89	0.22
25	Putative uncharacterized protein DKFZp686C15213 OS=Homo sapiens GN=DKFZp686C15213 PE=1 SV=1	Q6MZU6_HUMAN	0.87	0.64
26	Ig gamma-3 chain C region OS=Homo sapiens GN=IGHG3 PE=4 SV=1	A0A087WXL8_HUMAN	0.86	0.65
27	Apolipoprotein E OS=Homo sapiens GN=APOE PE=1 SV=1	APOE_HUMAN (+1)	0.83	0.48
28	IGL@ protein OS=Homo sapiens GN=IGL@ PE=1 SV=1	Q8N355_HUMAN	0.80	0.18
29	IGK@ protein OS=Homo sapiens GN=IGK@ PE=1 SV=1	Q6PIL8_HUMAN	0.77	0.21
30	Complement C3 OS=Homo sapiens GN=C3 PE=1 SV=2	CO3_HUMAN (+1)	0.77	0.43
31	Hemoglobin, beta OS=Homo sapiens GN=HBB PE=3 SV=1	D9YZU5_HUMAN (+1)	0.64	0.44
32	MS-D4 heavy chain variable region (Fragment) OS=Homo sapiens PE=2 SV=1	A0A0X9UWK7_HUMAN	0.63	0.13
33	Anti-FactorVIII scFv (Fragment) OS=Homo sapiens PE=2 SV=1	A2KBC6_HUMAN	0.61	0.22
34	Alpha-2 globin chain OS=Homo sapiens GN=HBA2 PE=3 SV=1	D1MGQ2_HUMAN (+2)	0.59	0.31
35	ProteinIGHV3-74 (Fragment) OS=Homo sapiens GN=IGHV3-74 PE=1 SV=1	A0A0B4J1X5_HUMAN	0.58	0.21
36	Vitamin K-dependent protein S OS=Homo sapiens GN=PROS1 PE=1 SV=1	PROS_HUMAN (+2)	0.57	0.17
37	Transferrin variant (Fragment) OS=Homo sapiens PE=2 SV=1	Q53H26_HUMAN	0.51	0.39

1  
2  
3

4	38	Galectin-3-binding protein OS=Homo sapiens GN=LGALS3BP PE=1 SV=1	LG3BP_HUMAN (+1)	0.50	0.32
5	39	Apolipoprotein C-III OS=Homo sapiens GN=APOC3 PE=2 SV=1	A3KPE2_HUMAN (+2)	0.50	0.40
6	40	cDNA FLJ94213, highly similar to Homo sapiens pregnancy-zone protein (PZP), mRNA OS=Homo sapiens PE=2 SV=1	B2R950_HUMAN (+1)	0.49	0.08
7	41	Thrombospondin-1 OS=Homo sapiens GN=THBS1 PE=1 SV=2	TSP1_HUMAN	0.48	0.26
8	42	Protein IGHV5-51 (Fragment) OS=Homo sapiens GN=IGHV5-51 PE=1 SV=1	A0A0C4DH38_HUMAN	0.47	0.10
9	43	Vinculin, isoform CRA_c OS=Homo sapiens GN=VCL PE=4 SV=1	A0A024QZN4_HUMAN (+2)	0.46	0.28
10	44	Fibronectin 1, isoform CRA_n OS=Homo sapiens GN=FN1 PE=4 SV=1	A0A024R462_HUMAN	0.46	0.11
11	45	Keratin 1 OS=Homo sapiens GN=KRT1 PE=3 SV=1	H6VRF8_HUMAN (+3)	0.44	0.08
12	46	Filamin-A OS=Homo sapiens GN=FLNA PE=1 SV=4	FLNA_HUMAN	0.42	0.27
13	47	Alpha-1-antitrypsin OS=Homo sapiens GN=SERPINA1 PE=1 SV=3	A1AT_HUMAN (+1)	0.41	0.24
14	48	Ig heavy chain V-III region BUT OS=Homo sapiens PE=1 SV=1	HV306_HUMAN	0.41	0.20
15	49	Talin-1 OS=Homo sapiens GN=TLN1 PE=1 SV=3	TLN1_HUMAN	0.41	0.24
16	50	Actinin, alpha 1, isoform CRA_a OS=Homo sapiens GN=ACTN1 PE=4 SV=1	A0A024R694_HUMAN (+1)	0.41	0.23
17	51	Apolipoprotein A-I, isoform CRA_a OS=Homo sapiens GN=APOA1 PE=4 SV=1	A0A024R3E3_HUMAN (+1)	0.40	0.11
18	52	von Willebrand factor OS=Homo sapiens GN=VWF PE=1 SV=4	VWF_HUMAN	0.39	0.25
19	53	Coagulation factor XIII A chain OS=Homo sapiens GN=F13A1 PE=1 SV=4	F13A_HUMAN	0.36	0.23
20	54	Complement factor H OS=Homo sapiens GN=CFH PE=1 SV=4	CFAH_HUMAN	0.33	0.12
21	55	Keratin, type I cytoskeletal 10 OS=Homo sapiens GN=KRT10 PE=1 SV=6	K1C10_HUMAN	0.30	0.10
22	56	Protein APOC4-APOC2 OS=Homo sapiens GN=APOC4-APOC2 PE=4 SV=1	K7ER74_HUMAN	0.30	0.16
23	57	Keratin, type I cytoskeletal 9 OS=Homo sapiens GN=KRT9 PE=1 SV=3	K1C9_HUMAN	0.28	0.09
24	58	Epididymis tissue protein Li 173 OS=Homo sapiens PE=2 SV=1	E9KL26_HUMAN (+1)	0.27	0.15
25	59	Myosin, heavy polypeptide 9, non-muscle, isoform CRA_a OS=Homo sapiens GN=MYH9 PE=4 SV=1	A0A024R1N1_HUMAN (+1)	0.26	0.22
26	60	Complement C1r subcomponent OS=Homo sapiens GN=C1R PE=2 SV=1	B4DPQ0_HUMAN	0.26	0.08
27	61	Heat shock cognate 71 kDa protein OS=Homo sapiens GN=HSPA8 PE=1 SV=1	HSP7C_HUMAN (+1)	0.24	0.16
28	62	Hemopexin OS=Homo sapiens GN=HPX PE=1 SV=2	HEMO_HUMAN	0.23	0.21
29	63	Epididymis secretory protein Li 52 OS=Homo sapiens GN=HEL-S-52 PE=2 SV=1	V9HWG7_HUMAN (+1)	0.22	0.15
30	64	Keratin, type II cytoskeletal 2 epidermal OS=Homo sapiens GN=KRT2 PE=1 SV=2	K22E_HUMAN	0.22	0.07
31	65	Fermitin family homolog 3 OS=Homo sapiens GN=FERMT3 PE=1 SV=1	URP2_HUMAN	0.21	0.14
32	66	Complement C4-B OS=Homo sapiens GN=C4B PE=1 SV=2	CO4B_HUMAN	0.21	0.09
33	67	Pyruvate kinase PKM OS=Homo sapiens GN=PKM PE=1 SV=4	KPYM_HUMAN (+1)	0.21	0.12
34	68	Gelsolin OS=Homo sapiens GN=GSN PE=1 SV=1	GELS_HUMAN	0.20	0.10
35	69	CD5 antigen-like OS=Homo sapiens GN=CD5L PE=1 SV=1	CD5L_HUMAN	0.19	0.08
36	70	Immunglobulin heavy chain variable region (Fragment) OS=Homo sapiens PE=4 SV=1	Q0ZCH6_HUMAN	0.18	0.05
37	71	Complement component 1, q subcomponent, C chain, isoform CRA_a OS=Homo sapiens GN=C1QC PE=4 SV=1	A0A024RAA7_HUMAN (+1)	0.18	0.03
38	72	Tubulin alpha-4A chain OS=Homo sapiens GN=TUBA4A PE=1 SV=1	TBA4A_HUMAN	0.18	0.11
39	73	cDNA FLJ35730 fis, clone TESTI2003131, highly similar to ALPHA-1-ANTICHYOTRYPSIN OS=Homo sapiens PE=2 SV=1	B3KS79_HUMAN	0.17	0.12
40	74	Immunoglobulin J chain OS=Homo sapiens GN=IGJ PE=1 SV=4	IGJ_HUMAN	0.16	0.07
41	75	Inter-alpha-trypsin inhibitor heavy chain H2 OS=Homo sapiens GN=ITIH2 PE=1 SV=1	Q5T985_HUMAN	0.16	0.05
42	76	78 kDa glucose-regulated protein OS=Homo sapiens GN=HSPA5 PE=1 SV=2	GRP78_HUMAN (+1)	0.16	0.14
43	77	Moesin OS=Homo sapiens GN=MSN PE=1 SV=3	MOES_HUMAN (+1)	0.16	0.10
44	78	Apolipoprotein M OS=Homo sapiens GN=APOM PE=1 SV=2	APOM_HUMAN	0.15	0.08
45	79	Complement component 1, q subcomponent, B chain, isoform CRA_a OS=Homo sapiens GN=C1QB PE=4 SV=1	A0A024RAB9_HUMAN (+3)	0.15	0.06
46	80	Beta 5-tubulin OS=Homo sapiens GN=TUBB PE=2 SV=1	Q5SU16_HUMAN (+1)	0.15	0.14

81	Inter-alpha-trypsin inhibitor heavy chain H1 OS=Homo sapiens GN=ITIH1 PE=1 SV=3	ITIH1_HUMAN	0.14	0.06
82	Lipoprotein, Lp(A) OS=Homo sapiens GN=LPA PE=1 SV=1	Q1HP67_HUMAN	0.14	0.15
83	Keratin, type I cytoskeletal 16 OS=Homo sapiens GN=KRT16 PE=1 SV=4	K1C16_HUMAN	0.13	0.05
84	Heat shock protein HSP 90-alpha OS=Homo sapiens GN=HSP90AA1 PE=1 SV=5	HS90A_HUMAN (+1)	0.13	0.08
85	Inter-alpha (Globulin) inhibitor H4 (Plasma Kallikrein-sensitive glycoprotein) OS=Homo sapiens GN=ITIH4 PE=2 SV=1	B2RMS9_HUMAN (+1)	0.12	0.09
86	Tubulin beta-1 chain OS=Homo sapiens GN=TUBB1 PE=1 SV=1	TBB1_HUMAN	0.12	0.09
87	Band 3 anion transport protein OS=Homo sapiens GN=SLC4A1 PE=1 SV=3	B3AT_HUMAN (+3)	0.11	0.06
88	CP protein OS=Homo sapiens GN=CP PE=2 SV=1	A5PL27_HUMAN (+1)	0.11	0.09
89	Alpha-1B-glycoprotein OS=Homo sapiens GN=A1BG PE=1 SV=4	A1BG_HUMAN (+1)	0.11	0.10
90	Integrin beta-3 OS=Homo sapiens GN=ITGB3 PE=1 SV=2	ITB3_HUMAN (+1)	0.11	0.09
91	Heparin cofactor 2 OS=Homo sapiens GN=SERPIND1 PE=1 SV=3	HEP2_HUMAN	0.11	0.08
92	APOL1 protein (Fragment) OS=Homo sapiens GN=APOL1 PE=2 SV=1	A5PL32_HUMAN (+2)	0.10	0.06
93	Complement C5 OS=Homo sapiens GN=C5 PE=1 SV=4	CO5_HUMAN	0.10	0.07
94	Endoplasmin OS=Homo sapiens GN=HSP90B1 PE=1 SV=1	ENPL_HUMAN (+2)	0.10	0.08
95	Platelet glycoprotein Ib alpha (Fragment) OS=Homo sapiens GN=GP1BA PE=4 SV=1	A5CKE2_HUMAN (+2)	0.10	0.10
96	Clusterin OS=Homo sapiens GN=CLU PE=1 SV=1	CLUS_HUMAN	0.10	0.02
97	Complement C1s subcomponent OS=Homo sapiens GN=C1S PE=1 SV=1	C1S_HUMAN	0.10	0.06
98	Glyceraldehyde-3-phosphate dehydrogenase OS=Homo sapiens GN=GAPDH PE=1 SV=3	G3P_HUMAN (+1)	0.09	0.05
99	Heat shock protein 90kDa alpha (Cytosolic), class B member 1, isoform CRA_a OS=Homo sapiens GN=HSP90AB1 PE=3 SV=1	A0A024RD80_HUMAN (+2)	0.09	0.05
100	C4b-binding protein beta chain OS=Homo sapiens GN=C4BPB PE=1 SV=1	C4BPB_HUMAN	0.09	0.04
101	Integrin alpha-IIb OS=Homo sapiens GN=ITGA2B PE=1 SV=3	ITA2B_HUMAN	0.09	0.06
102	Vitronectin OS=Homo sapiens GN=VTN PE=4 SV=1	D9ZGG2_HUMAN (+1)	0.09	0.07
103	Keratin, type II cytoskeletal 5 OS=Homo sapiens GN=KRT5 PE=1 SV=3	K2C5_HUMAN	0.09	0.03
104	Plasminogen OS=Homo sapiens GN=PLG PE=1 SV=2	PLMN_HUMAN	0.09	0.08
105	Ficolin-3 OS=Homo sapiens GN=FCN3 PE=1 SV=2	FCN3_HUMAN	0.08	0.03
106	14-3-3 protein zeta/delta OS=Homo sapiens GN=YWHAZ PE=1 SV=1	1433Z_HUMAN (+1)	0.07	0.04
107	Proteoglycan 4, isoform CRA_a OS=Homo sapiens GN=PRG4 PE=4 SV=1	A0A024R930_HUMAN (+2)	0.07	0.04
108	IgGFc-binding protein OS=Homo sapiens GN=FCGBP PE=1 SV=3	FCGBP_HUMAN	0.07	0.03
109	Catalase OS=Homo sapiens GN=CAT PE=1 SV=3	CATA_HUMAN	0.06	0.03
110	Zyxin OS=Homo sapiens GN=ZYX PE=1 SV=1	ZYX_HUMAN	0.06	0.03
111	Carboxypeptidase N subunit 2 OS=Homo sapiens GN=CPN2 PE=1 SV=3	CPN2_HUMAN	0.06	0.02
112	Multimerin-1 OS=Homo sapiens GN=MMRN1 PE=1 SV=3	MMRN1_HUMAN	0.06	0.06
113	Alpha-2-antiplasmin OS=Homo sapiens GN=SERPINF2 PE=1 SV=3	A2AP_HUMAN	0.06	0.04
114	Calpain 1, (Mu/l) large subunit, isoform CRA_a OS=Homo sapiens GN=CAPN1 PE=4 SV=1	A0A024R580_HUMAN (+2)	0.06	0.06
115	Clathrin heavy chain OS=Homo sapiens GN=CLTC PE=1 SV=1	A0A087WVQ6_HUMAN (+1)	0.05	0.04
116	Coagulation factor XIII B chain OS=Homo sapiens GN=F13B PE=1 SV=3	F13B_HUMAN	0.04	0.02
117	cDNA FLJ61290, highly similar to Neutral alpha-glucosidase AB OS=Homo sapiens PE=2 SV=1	B4DJ30_HUMAN (+2)	0.04	0.04
118	Complement component C6 OS=Homo sapiens GN=C6 PE=1 SV=3	CO6_HUMAN	0.04	0.04
119	Mannan-binding lectin serine protease 1 OS=Homo sapiens GN=MASP1 PE=1 SV=3	MASP1_HUMAN	0.04	0.02
120	Soluble scavenger receptor cysteine-rich domain-containing protein SSC5D OS=Homo sapiens GN=SSC5D PE=2 SV=3	SRCLR_HUMAN	0.03	0.01
121	Spectrin, beta, erythrocytic (Includes spherocytosis, clinical type I) variant (Fragment) OS=Homo sapiens PE=2 SV=1	Q59FP5_HUMAN	0.03	0.02
122	Coagulation factor V OS=Homo sapiens GN=F5 PE=4 SV=1	A0A0A0MRJ7_HUMAN (+1)	0.03	0.01

## Supporting Table 6

**Table S6: Most-abundant proteins (top-20)** identified by LC-MS/MS in *ex vivo* protein coronas (formed after incubation of PEGylated liposomal doxorubicin with plasma samples) obtained from ovarian carcinoma patients (n=6) and from healthy controls (n=6). RPA% values represent the average and standard deviation from the 6 biological replicates.

Ex vivo corona (Ovarian Carcinoma Patients; n=6)	RPA%	Ex vivo corona (Healthy Controls; n=6)	RPA%
Identified Protein		Identified Protein	
Full-length cDNA clone CS0DD006YL02 of Neuroblastoma of Homo sapiens	4.79 ± 0.92	Apolipoprotein B (Including Ag(X) antigen)	4.60 ± 2.55
Apolipoprotein B (Including Ag(X) antigen)	3.49 ± 1.27	Alpha-2-macroglobulin	4.56 ± 2.11
Ig mu chain C region (A0A087X2C0)	3.44 ± 0.74	Ig mu chain C region (A0A087X2C0)	4.53 ± 0.77
Fibrinogen beta chain	3.11 ± 0.87	Fibrinogen beta chain	3.69 ± 0.60
Haptoglobin	3.10 ± 1.22	Full-length cDNA clone CS0DD006YL02 of Neuroblastoma of Homo sapiens	3.43 ± 3.80
Haptoglobin (Fragment) (H3BS21)	3.05 ± 1.15	Ig mu chain C region (A0A087WYJ9)	3.03 ± 2.41
Ig mu chain C region (A0A087WYJ9)	2.65 ± 1.45	Fibrinogen alpha chain	2.80 ± 1.07
Alpha-2-macroglobulin	2.51 ± 0.84	Protein IGHV3-72	2.78 ± 0.58
Beta-globin (D9YZU5)	2.43 ± 1.29	IGK@ protein (Q6PIL8)	2.15 ± 0.15
Fibrinogen alpha chain	2.42 ± 0.86	cDNA FLJ51597, highly similar to C4b-binding protein alpha chain	2.12 ± 1.17
Haptoglobin-related protein (HPTR)	2.28 ± 0.99	Fibrinogen gamma chain	2.09 ± 0.74
Apolipoprotein E isoform 1 (Fragment)	2.08 ± 0.84	Lipoprotein B (Fragment)	2.09 ± 3.25
Mutant hemoglobin alpha 2 globin chain (A0A0K2BMD8)	2.07 ± 1.47	Haptoglobin	2.06 ± 1.02
Fibrinogen gamma chain	1.98 ± 0.54	Lambda-chain (AA -20 to 215)	1.99 ± 0.16
Lipoprotein B (Fragment)	1.94 ± 4.74	Haptoglobin (Fragment) (H3BS21)	1.99 ± 1.31
Protein IGHV3-72	1.92 ± 0.74	Uncharacterized protein (Q8TC0)	1.69 ± 0.84
cDNA FLJ51597, highly similar to C4b-binding protein alpha chain	1.78 ± 0.53	Haptoglobin-related protein (HPTR)	1.55 ± 0.73
IGK@ protein (Q6PIL8)	1.63 ± 0.43	Serum albumin	1.33 ± 0.74
Lambda-chain (AA -20 to 215)	1.41 ± 0.20	Apolipoprotein E isoform 1 (Fragment)	1.28 ± 0.46
Serum albumin	1.37 ± 0.32	Ig gamma-1 chain C region (A0A087WV47)	1.18 ± 0.40