

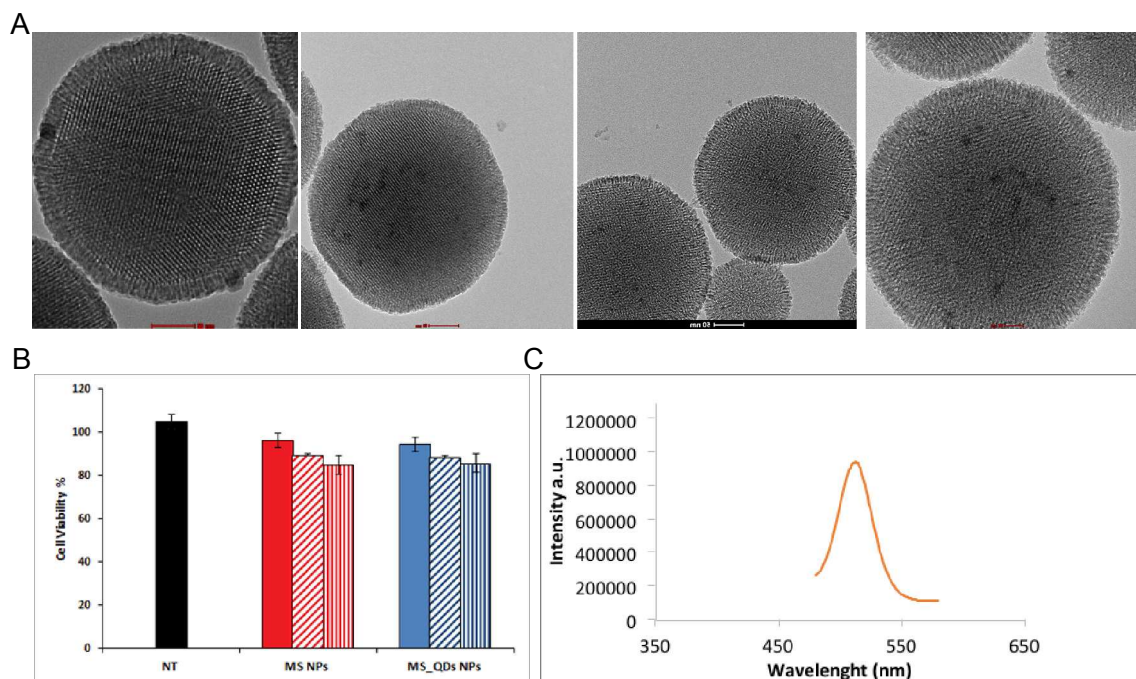


Figure S1. (A) TEM images of silica NPs before (first image on the left) and after loading with quantum dots (QDs) (respectively second, third and fourth image from left to right). Embedded QDs are visible as dark spots. (B) Cell viability of CHO cells at 24 h after administration of bare mesoporous silica nanoparticles (MS NPs, red bars) and mesoporous silica NPs loaded with quantum dots (MS_QDs NPs, blue concentrations: 1 (solid bars), 10 (diagonal dashed bars) and 100 (vertical dashed bars) $\mu\text{g/mL}$ per well. Black bar represents not treated (NT) cells. (C) Emission spectrum of a water dispersion of QDs-loaded mesoporous silica nanoparticles, dilution 1:10.

Table S1. The full list of the most abundant corona proteins associated with DOPG and silica nanoparticles as identified by NanoLC-MS/MS.

DOPG			
#	Identified Proteins	RPA (%)	St. Dev. (%)
1	Fibrinogen beta chain	6.33185656	0.23896037
2	Serum albumin	5.81370288	0.20670324
3	Beta-2-glycoprotein 1	4.40301349	0.04039462
4	Fibrinogen gamma chain	4.12284056	0.35708812
5	Ig kappa chain C region	3.45373994	0.3384347
6	Apolipoprotein C-III	3.44211119	0.21315858
7	Fibrinogen alpha chain	3.23695549	0.30925856
8	Keratin, type I cytoskeletal 10	3.23476459	0.18457928
9	Keratin, type II cytoskeletal 1	2.85292098	0.06713864
10	Keratin, type II cytoskeletal 2 epidermal	2.5819412	0.0491592
11	Keratin, type I cytoskeletal 9	1.9558814	0.04951598
12	Alpha-2-HS-glycoprotein	1.81050755	0.07871772
13	Apolipoprotein A-II	1.76757061	0.21315858
14	Clusterin	1.68259125	0.05903829
15	Ig lambda-2 chain C regions	1.62802556	0.21315858
16	Ig gamma-1 chain C region	1.42129216	0.17751933
17	Complement C3	1.38997813	0.031077
18	Ig gamma-3 chain C region	1.23548421	0.12969221
19	Ig gamma-2 chain C region	1.20809833	0.234836
20	Serum paraoxonase/arylesterase 1	1.18962154	0.13836263
21	Apolipoprotein A-I	1.12236232	0.10307574
22	Apolipoprotein E	1.09439496	0.06513179
23	C4b-binding protein alpha chain	1.06915112	0.09538352
24	Apolipoprotein A-IV	1.02333035	0.06822202
25	Ig mu chain C region	1.00244606	0.05425898
26	Transthyretin	0.99135128	0.11077876
27	Gelsolin	0.98168319	0.11146563
28	Alpha-1-antitrypsin	0.9471249	0.06531896
29	Apolipoprotein D	0.8771403	0.07309503
30	Complement component C9	0.86901863	0.05071981
31	Prothrombin	0.84790229	0.03349635
32	Keratin, type I cytoskeletal 14	0.84621548	0.07428822
33	Apolipoprotein C-II	0.83727029	0
34	Serum amyloid A-1 protein	0.76749776	0.10964254
35	Inter-alpha-trypsin inhibitor heavy chain H1	0.75483279	0.06327422
36	Ig alpha-1 chain C region	0.74056802	0.11660922
37	Inter-alpha-trypsin inhibitor heavy chain H2	0.73853559	0.03831336
38	Ig gamma-4 chain C region	0.71064608	0.06513179
39	Apolipoprotein B-100	0.69511102	0.04273091
40	Lipopolysaccharide-binding protein	0.69509232	0.05792436
41	Complement C1r subcomponent	0.68435217	0.02930931
42	Plasminogen	0.680346	0.03511371
43	Keratin, type II cytoskeletal 6A	0.65663698	0.029541
44	Complement C4-B	0.64422092	0.04208514
45	Keratin, type II cytoskeletal 5	0.6437078	0.09903197

46	Complement C4-A	0.62831423	0.03976672
47	Actin, cytoplasmic 1	0.60912521	0.07607971
48	Kininogen-1	0.58983625	0.049235
49	Heparin cofactor 2	0.57450125	0.03109579
50	Protein AMBP	0.56414366	0.06012165
51	Haptoglobin-related protein	0.56414366	0.06012165
52	Inter-alpha-trypsin inhibitor heavy chain H4	0.56134141	0.0310228
53	Ig mu heavy chain disease protein	0.55926194	0.48466382
54	Ficolin-2	0.5568121	0.18796165
55	Hemoglobin subunit alpha	0.54577619	0.11816401
56	Keratin, type I cytoskeletal 16	0.53173048	0.03475412
57	Serotransferrin	0.51831018	0.09135368
58	Hemoglobin subunit beta	0.4796861	0.09593722
59	Haptoglobin	0.46618383	0.07100773
60	Dermcidin	0.46515016	0.08056637
61	N-acetylmuramoyl-L-alanine amidase	0.4373912	0.03781846
62	Keratin, type II cytoskeletal 1b	0.41263321	0.03781846
63	Coagulation factor V	0.41217473	0.01532931
64	Apolipoprotein L1	0.40700639	0.05328965
65	Vitronectin	0.3979618	0.02842584
66	Ig heavy chain V-III region VH26	0.3935886	0.13634309
67	CD5 antigen-like	0.37701645	0.02332184
68	Vitamin D-binding protein	0.35720022	0.08848092
69	Fibronectin	0.35602558	0.03501891
70	Ig kappa chain V-III region HAH	0.32892761	0
71	Vitamin K-dependent protein S	0.30699911	0.02046661
72	Hemopexin	0.30503116	0.01704289
73	Complement factor H-related protein 1	0.29622721	0.0617038
74	Complement C1s subcomponent	0.2923801	0.04149803
75	Immunoglobulin J chain	0.28425843	0.09847001
76	Serum amyloid A-4 protein	0.27288809	0.05908201
77	Keratin, type II cytoskeletal 78	0.26032088	0.05605874
78	Complement component C8 beta chain	0.25965099	0.03499619
79	C4b-binding protein beta chain	0.23755883	0.06330215
80	Protein S100-A9	0.23615316	0
81	Complement component C8 gamma chain	0.23257508	0.04028319
82	Integrin beta-3	0.22936715	0.01764363
83	Ig kappa chain V-I region EU	0.21319382	0.19539537
84	Integrin alpha-IIb	0.20828848	0.00784274
85	Fibulin-1	0.20599507	0.04149803
86	Histidine-rich glycoprotein	0.20466607	0.06768694
87	Plasma protease C1 inhibitor	0.20466607	0.03222655
88	Ig kappa chain V-IV region Len	0.1967943	0.18036495
89	Complement factor H	0.18773327	0.02208627
90	Hyaluronan-binding protein 2	0.1867984	0.05626858
91	Ig lambda chain V-III region SH	0.18606006	0.16113274
92	Protein S100-A8	0.18606006	0.16113274

93	Glyceraldehyde-3-phosphate dehydrogenase	0.18476798	0.0246175
94	Fetuin-B	0.17055506	0.02110072
95	Carboxypeptidase B2	0.17055506	0.04884884
96	Complement C1q subcomponent subunit B	0.17055506	0.05685169
97	Apolipoprotein C-I	0.17055506	0.29541003
98	Secreted phosphoprotein 24	0.17055506	0.03692625
99	Tetranectin	0.15572418	0.03853174
100	Monocyte differentiation antigen CD14	0.15349955	0.03837489
101	Keratinocyte proline-rich protein	0.1519006	0.03663663
102	Alpha-2-antiplasmin	0.14884805	0.01611327
103	EGF-containing fibulin-like extracellular matrix protein 1	0.14884805	0.01611327
104	Alpha-2-macroglobulin	0.14439631	0.01087399
105	Complement factor B	0.14279028	0.01784879
106	Hornerin	0.13789558	0.00314266
107	Plasma kallikrein	0.13692448	0.03302457
108	Alpha-1-antichymotrypsin	0.12791629	0.03197907
109	Sex hormone-binding globulin	0.12791629	0.07262155
110	Complement component C8 alpha chain	0.12594835	0.03607299
111	Carboxypeptidase N subunit 2	0.12581931	0.02516386
112	Tubulin alpha-1B chain	0.12279964	0
113	Ras-related protein Rap-1b	0.12182504	0.1116545
114	Talin-1	0.1212836	0.01312933
115	Keratin, type II cytoskeletal	0.11992153	0.20771018
116	Complement C1q subcomponent subunit C	0.11807658	0
117	Ig kappa chain V-II region GM607 (Fragment)	0.11807658	0.20451463
118	Keratin, type I cytoskeletal 17	0.1172566	0.20309439
119	Angiotensinogen	0.11584872	0.02896218
120	Platelet glycoprotein IX	0.10771898	0.09328738
121	Annexin A2	0.10495696	0.02272385
122	von Willebrand factor	0.10266421	0.00286806
123	Filaggrin-2	0.10109514	0.00714702
124	Suprabasin	0.09226749	0.01452836
125	14-3-3 protein zeta/delta	0.09136878	0.08374087
126	Zinc-alpha-2-glycoprotein	0.09029385	0.07819677
127	Filamin-A	0.08740188	0.02503286
128	Cholesteryl ester transfer protein	0.08372703	0.02790901
129	Inter-alpha-trypsin inhibitor heavy chain H3	0.08186643	0.02344744
130	Junction plakoglobin	0.08111765	0.02161537
131	Desmoglein-1	0.08078924	0.01346487
132	Fermitin family homolog 3	0.08078924	0.02019731
133	Ig heavy chain V-III region BRO	0.07871772	0.13634309
134	Apolipoprotein(a)	0.07761787	0.00984894
135	Alpha-1B-glycoprotein	0.07580225	0.01641167
136	Phospholipid transfer protein	0.07442403	0.01611327
137	Mannan-binding lectin serine protease 2	0.0740568	0.01166092
138	Platelet basic protein	0.07309503	0.1266043
139	Alpha-synuclein	0.07309503	0.1266043

140	Tubulin beta-1 chain	0.07163312	0.0177246
141	Proteoglycan 4	0.07115873	0.01016553
142	Collectin-11	0.07057451	0.06111932
143	Keratin, type II cytoskeletal 74	0.07057451	0.12223863
144	Complement component C6	0.06822202	0.00844029
145	Corticosteroid-binding globulin	0.06822202	0.06822202
146	Erythrocyte band 7 integral membrane protein	0.06395815	0.05538938
147	Kallistatin	0.06265288	0.06265288
148	Complement C5	0.06259734	0.00471399
149	Protein Z-dependent protease inhibitor	0.0601959	0
150	Sulfhydryl oxidase 1	0.05548177	0.01849392
151	Complement component C7	0.05443247	0.0471399
152	Alpha-enolase	0.05443247	0.04988818
153	Complement factor I	0.05426752	0.01342773
154	Beta-Ala-His dipeptidase	0.04488291	0.04113587
155	Retinol-binding protein 4	0.04449262	0.07706349
156	Phosphatidylcholine-sterol acyltransferase	0.04093321	0.0354492
157	CD9 antigen	0.04093321	0.07089841
158	Glutathione peroxidase	0.03935886	0.06817154
159	Skin-specific protein	0.03935886	0.06817154
160	Caspase-14	0.03654751	0.06330215
161	Ceruloplasmin	0.03355181	0.01452836
162	Afamin	0.02966175	0.02568783
163	Coagulation factor IX	0.02951914	0.05112866
164	Antithrombin-III	0.02896218	0.05016397
165	Desmocollin-1	0.02558326	0.02344744
166	Myosin-9	0.02479435	0.01407642
167	Selenoprotein P	0.02379838	0.04122
168	Coagulation factor XII	0.02257346	0.03909839
169	Procollagen C-endopeptidase enhancer 1	0.02131938	0.03692625
170	Vinculin	0.01650533	0.02858807
171	Cartilage acidic protein 1	0.0144131	0.02496423
172	Desmoplakin	0.01387044	0.00462348
173	Coagulation factor XIII B chain	0.01346487	0.02332184
174	Protein-glutamine gamma-glutamyltransferase K	0.01137034	0.019694
175	Band 3 anion transport protein	0.01003265	0.01737706

Silica			
#	Identified Proteins	RPA (%)	St. Dev. (%)
1	Fibrinogen beta chain	12.2337689	0.07761725
2	Fibrinogen gamma chain	7.15044085	0.72241555
3	Histidine-rich glycoprotein	5.38843495	0.19430933
4	Fibrinogen alpha chain	5.3491783	0.41578506
5	Keratin, type II cytoskeletal 1	3.70086559	0.08572668
6	Serum albumin	3.61269726	0.12901328
7	Kininogen-1	3.46797722	0.09702955
8	Apolipoprotein C-III	3.15587511	0.6875679
9	Keratin, type I cytoskeletal 9	2.96821522	0.09564026
10	Serum amyloid A-1 protein	2.24061701	0.08962468
11	Apolipoprotein A-I	2.23965331	0.16358044
12	Ig kappa chain C region	2.16095063	0.21766343
13	Apolipoprotein A-II	2.05321995	0.99441981
14	Lysozyme C	1.67299404	0.18574747
15	Serum amyloid A-2 protein	1.40411999	0.10348967
16	Coagulation factor XI	1.32047029	0.06295031
17	Keratin, type II cytoskeletal 2 epidermal	1.31909145	0.04018402
18	Alpha-2-HS-glycoprotein	1.31909145	0.19303777
19	Cystatin-C	1.30702659	0.11979097
20	Plasminogen	1.21338029	0.03648071
21	Keratin, type I cytoskeletal 10	1.20512282	0.19061257
22	Angiogenin	1.13173126	0.18574747
23	Ig lambda-2 chain C regions	0.87451961	0.06585706
24	Apolipoprotein E	0.84811503	0.10061495
25	Ig gamma-3 chain C region	0.8466982	0.10747613
26	Apolipoprotein A-IV	0.83649702	0.04829518
27	Transthyretin	0.78421595	0.0784216
28	Platelet basic protein	0.77674723	0.2255505
29	Ig gamma-1 chain C region	0.73193489	0.12566804
30	Apolipoprotein C-I	0.69708085	0.13941617
31	Clusterin	0.67563221	0.11057628
32	C-C motif chemokine 14	0.64638406	0.17424141
33	Hemoglobin subunit alpha	0.64131438	0.12777703
34	Serotransferrin	0.59206607	0.08974805
35	Keratin, type II cytoskeletal 5	0.58015116	0.04673727
36	Hemoglobin subunit beta	0.54895117	0.0784216
37	Hemopexin	0.53889712	0.13289614
38	Ig mu chain C region	0.5292124	0.03911542
39	Complement factor D	0.52668331	0.11695211
40	Ribonuclease 4	0.49205707	0.04261339
41	C4b-binding protein alpha chain	0.48691617	0.03243706
42	Ig mu heavy chain disease protein	0.48633548	0.06738862
43	Ig alpha-1 chain C region	0.48428775	0.01906389
44	Alpha-1-antitrypsin	0.48054084	0.05339343
45	Keratin, type I cytoskeletal 14	0.46650795	0.05023002

46	Complement C4-B	0.45725614	0.05605188
47	Platelet factor 4	0.4562711	0.11406778
48	Tetranectin	0.45461794	0.03149686
49	Serum paraoxonase/arylesterase 1	0.44961715	0.01811069
50	Insulin-like growth factor-binding protein 4	0.4481234	0.07761725
51	Complement C3	0.43837812	0.00387395
52	Haptoglobin	0.43683733	0.06439357
53	Apolipoprotein C-II	0.41824851	0.40059286
54	Inter-alpha-trypsin inhibitor heavy chain H4	0.40200585	0.012182
55	Complement C1r subcomponent	0.39733608	0.01811069
56	Keratin, type II cytoskeletal 6A	0.36945285	0.02414759
57	Prothrombin	0.35849872	0.01792494
58	Retinoic acid receptor responder protein 2	0.35220927	0.03812777
59	Ribonuclease pancreatic	0.34854042	0.06970809
60	Haptoglobin-related protein	0.33245394	0.06697336
61	Gelsolin	0.32584477	0.03037164
62	Ig gamma-2 chain C region	0.3253044	0.14510895
63	Keratin, type I cytoskeletal 16	0.3198371	0.07380856
64	Beta-2-glycoprotein 1	0.31918965	0.06873582
65	Matrix Gla protein	0.31368638	0
66	Insulin-like growth factor-binding protein 2	0.31069889	0.10952317
67	Serum amyloid A-4 protein	0.30671557	0.04829518
68	Vitronectin	0.30206837	0
69	Complement C4-A	0.29039016	0.2535774
70	Insulin-like growth factor-binding protein 6	0.28440899	0.07666622
71	C-C motif chemokine 16	0.26887404	0.08962468
72	Apolipoprotein D	0.23899915	0.05974979
73	Complement component C9	0.23236028	0.05012233
74	Dermcidin	0.22813555	0.19757118
75	Inter-alpha-trypsin inhibitor heavy chain H1	0.22361802	0.02484645
76	Actin, cytoplasmic 1	0.21908255	0.06218955
77	Plasma kallikrein	0.21796049	0.02040641
78	Lipopolysaccharide-binding protein	0.21307	0.02367444
79	Insulin-like growth factor-binding protein 5	0.20237831	0.0701059
80	Inter-alpha-trypsin inhibitor heavy chain H2	0.20123277	0.01183722
81	Ig heavy chain V-III region BRO	0.19303777	0
82	Ficolin-2	0.17221997	0.04261339
83	Coagulation factor XII	0.17221997	0.04643687
84	CD5 antigen-like	0.1650981	0.03301962
85	Retinol-binding protein 4	0.16366246	0
86	Apolipoprotein B-100	0.15805903	0.00486336
87	Vitamin D-binding protein	0.14993815	0.04928229
88	Antileukoproteinase	0.14937447	0.13690396
89	Selenoprotein P	0.14590064	0.02918013
90	Apolipoprotein L1	0.14258472	0.02851694
91	Immunoglobulin J chain	0.13941617	0
92	Ig heavy chain V-III region VH26	0.12869185	0.22290082

93	Alpha-2-macroglobulin	0.12829709	0.02222171
94	Vitamin K-dependent protein S	0.12826288	0.05875362
95	Insulin-like growth factor II	0.12547455	0
96	Neutrophil defensin 1	0.12547455	0.2173283
97	Keratin, type II cytoskeletal 1b	0.12142699	0.21031771
98	Arginase-1	0.11949957	0.02069793
99	Ras-related protein Rap-1b	0.11949957	0
100	Junction plakoglobin	0.11731361	0.03533794
101	Keratin, type II cuticular Hb3	0.11618014	0.02323603
102	Mannan-binding lectin serine protease 2	0.10456213	0.01906389
103	Alpha-1-antichymotrypsin	0.10456213	0.02614053
104	Glyceraldehyde-3-phosphate dehydrogenase	0.10456213	0.03485404
105	Alpha-1-acid glycoprotein 1	0.10456213	0
106	PDZ and LIM domain protein 1	0.10456213	0
107	Extracellular matrix protein 1	0.10284799	0.0205696
108	Hornerin	0.09788795	0.00770668
109	Protein AMBP	0.09651889	0.03217296
110	N-acetylmuramoyl-L-alanine amidase	0.09444321	0.0309138
111	WNT1-inducible-signaling pathway protein 2	0.09294411	0.08049196
112	Fibronectin	0.09223731	0.00728766
113	Suprabasin	0.08913493	0.01187586
114	Complement factor H-related protein 1	0.08805232	0.08309755
115	Procollagen C-endopeptidase enhancer 1	0.08713511	0.01509224
116	C-C motif chemokine 18	0.0836497	0.14488553
117	Keratin, type I cuticular Ha1	0.08009014	0.02669671
118	Cysteine and glycine-rich protein 1	0.07966638	0.06899311
119	Insulin-like growth factor-binding protein 3	0.0784216	0.06791509
120	Leukocyte cell-derived chemotaxin-2	0.0784216	0.13583019
121	Complement factor H	0.07823353	0.01378889
122	Proline-rich acidic protein 1	0.07380856	0.12784018
123	Alpha-1B-glycoprotein	0.06970809	0.02323603
124	Secreted phosphoprotein 24	0.06970809	0.06036897
125	Hyaluronan-binding protein 2	0.06638865	0.0229977
126	Keratinocyte proline-rich protein	0.06535133	0.02263837
127	Complement C1q subcomponent subunit B	0.06196274	0.05366131
128	Complement C1s subcomponent	0.05974979	0.00940815
129	Ig kappa chain V-III region HAH	0.05974979	0.10348967
130	Keratin, type II cytoskeletal 78	0.05870155	0.01270926
131	Keratin, type II cuticular Hb2	0.05870155	0.05083703
132	Keratin, type I cuticular Ha6	0.05630268	0.0139313
133	Calmodulin-like protein 5	0.05228106	0.09055346
134	Desmoglein-1	0.05136385	0.01270926
135	Desmocollin-1	0.05018982	0.01254746
136	Keratin, type II cuticular Hb5	0.04481234	0.07761725
137	Zyxin	0.0411392	0.03562759
138	Collagen alpha-1(XVIII) chain	0.03994508	0.01076773
139	Plasma serine protease inhibitor	0.03636944	0.03149686

140	Four and a half LIM domains protein 1	0.03485404	0.06036897
141	Cadherin-1	0.03449472	0.00746833
142	Ceruloplasmin	0.03428267	0.00593793
143	Desmocollin-3	0.03345988	0.00724428
144	Complement C1q subcomponent subunit C	0.03217296	0.05572521
145	Plasma protease C1 inhibitor	0.03041807	0.02634282
146	EGF-containing fibulin-like extracellular matrix protein 1	0.03041807	0.02634282
147	Integrin alpha-IIb	0.02961051	0.01282173
148	Keratin, type II cytoskeletal 74	0.02884473	0.04996053
149	Filaggrin-2	0.02867026	0.01273269
150	Plakophilin-1	0.02519569	0.02309223
151	Heparin cofactor 2	0.02201308	0.03812777
152	Complement factor B	0.01945342	0.01684716
153	Apolipoprotein(a)	0.01920103	0.00382566
154	Serpin B12	0.01818472	0.03149686
155	Coagulation factor V	0.01659716	0.00287471
156	Desmoplakin	0.0163772	0.00951117
157	Angiotensinogen	0.01578296	0.02733689
158	Alpha-2-antiplasmin	0.01520904	0.02634282
159	Thrombospondin-4	0.00789148	0.01366845
160	Talin-1	0.00774534	0.00709872
161	von Willebrand factor	0.00541422	0.00468885
162	Filamin-A	0.00297686	0.00515607