

[10.1071/RD22228](https://doi.org/10.1071/RD22228)

Reproduction, Fertility and Development

Supplementary Material

Quantitative proteomic analysis of heifer serum at the peri-implantation period using two complementary methods

Jimena Inés Ruiz Álvarez^A, Juan Manuel Teijeiro^{A,B}, Caroline Evans^C, and Patricia Estela Marini^{A,}*

^ALaboratorio de Medicina Reproductiva, Facultad de Ciencias Bioquímicas y Farmacéuticas, Universidad Nacional de Rosario, Rosario, Argentina.

^BConsejo Nacional de Investigaciones Científicas y Técnicas, CONICET, Buenos Aires, Argentina.

^CDepartment Chemical and Biological Engineering, Bioanalytical Facility, University of Sheffield, Sheffield, UK.

*Correspondence to: Patricia Estela Marini Laboratorio de Medicina Reproductiva, Facultad de Ciencias Bioquímicas y Farmacéuticas, Universidad Nacional de Rosario, Rosario, Argentina Email: pmarini@fbioyf.unr.edu.ar

Supplementary Table S1. The iTRAQ quantified content of every sample compared to sample P1 is shown for the 125 identified polypeptides.

Protein (Name and Gene Number or Uniprot symbol)	Relative quantification to sample p1						
	p2 vs. p1	p3 vs. p1	p4 vs.p1	np1 vs. p1	np2 vs. p1	np3 vs. p1	np4 vs. p1
Protein RRP5 homolog GN=PDCD11	0,98393678	1,0298256	0,95508847	0,93399991	1,09418471	1,03763272	1,06525267
Protein phosphatase 1 regulatory subunit 37 GN=PPP1R37	1,0030279	0,92740956	1,05792849	1,08043578	0,92791531	0,94803056	1,06179405
Transthyretin GN=TTR	0,97921619	0,91038504	0,97834485	0,89130941	0,99514895	0,93748231	0,82435427
Insulin-like 3 GN=INSL3	1,00428235	1,42510067	0,85855118	1,22687351	0,84506372	0,90801278	0,84236519
Prothrombin GN=F2	0,91489519	0,98582993	0,84365144	0,91369446	0,78027884	0,87575658	0,79627566
Kininogen-1 GN=KNG1	1,05630246	0,89345934	0,98556827	0,86010476	0,96838727	0,98133105	0,92745471
Isoform LMW of Kininogen-2 GN=KNG2	0,89544018	0,87432636	0,98336806	0,86437928	0,99962854	0,93904097	0,92198541
Hemoglobin subunit alpha GN=HBA	2,68398504	1,81160271	1,31220276	0,78823484	1,70777066	1,31763505	1,54708778
Serumalbumin GN=ALB	1,0516867	1,02274392	1	0,96118082	1,00889381	1,07745621	0,96262566
Plasminogen GN=PLG	0,99557902	1,09682695	0,99885756	1,20979461	0,93603654	1,10160583	0,95559524
Apolipoprotein A-I GN=APOA1	0,80215106	0,69297798	1,23405109	0,88816364	0,57176098	0,87633268	0,58175073
Beta-2-glycoprotein 1 GN=APOH	0,99534879	1,01492565	0,99696735	0,84403386	0,82477686	0,97665323	0,8931803
Clusterin GN=CLU	1,55236725	0,8151812	1,10913019	1,04289765	1,2249488	1,13556654	1,32548483
Conglutinin GN=CGN1	1,0673516	0,84338814	1,00056501	0,9973481	1,33676701	0,98774331	0,99336589
Alpha-2-antiplasmin GN=SERPINF2	0,93846386	0,94356065	0,97521301	1,02826528	0,95527028	1,07920365	1,0415907
Ezrin GN=EZR	1,0143584	0,99548522	1,03418792	0,96457402	0,72446946	1,11282747	0,94628513
Alpha-1-antitrypsin GN=SERPINA1	0,79777277	0,9984858	0,75738526	0,96649817	0,96205418	0,99017734	0,97354475
G protein-coupled receptor kinase 5 GN=GRK5	0,87356107	1,07369	1,06681663	1,10967884	0,69885561	0,93183296	1,03691647
Actin, cytoplasmic 2 GN=ACTG1	1,04172069	1,15859457	1,2593769	1,38047643	0,98731562	1,1540243	1,1279324
Complement factor B GN=CFB	1,13599353	1,0124357	1,08756734	0,95049189	1,14669103	1,0117573	0,89008057
Apolipoprotein A-II GN=APOA2	1,16625542	0,74683421	1,83702878	0,80091671	0,72605477	1,03157889	0,49600556
Tubulin alpha-4A chain GN=TUBA4A	1,05947309	0,91735688	1,09916186	0,97866951	1,05453467	1,08431725	1,12580758
Insulin-like growth factor-binding protein 5 GN=IGFBP5	1,33758325	0,99184595	1,05912183	1,60719131	0,73634265	0,91943928	1,12080071
Hepatocyte growth factor-like protein GN=MST1	0,93627324	1,27413435	0,92369538	1,21679918	0,55380281	1,00314851	0,81591734
Complement factor H GN=CFH	0,83219171	0,91646431	0,8756732	1,08825479	1,07177688	0,92012576	0,86918998

Coagulation factor V GN=F5	1,10738412	0,93359723	0,99359225	0,9594885	0,96587625	0,9319496	0,94482789
Primary amine oxidase, liver isozyme	1,03716467	1,03020302	0,95114203	0,99199239	1,0051766	0,94860806	0,96963646
Carboxypeptidase B2 GN=CPB2	0,87820736	0,96967191	1,10218745	0,92938153	0,72099276	0,924545	1,02105445
Tetranectin GN=CLEC3B	1,43366203	1,11881106	1,4687514	0,67870424	1,55259575	1,28295088	1,10725017
Protein HP-20 homolog	1,23644148	0,98734972	1,02781026	0,98044689	1,2422438	1,29003956	1,1345416
Protein HP-25 homolog 1	1,2997076	1,4080995	1,14562777	1,08054679	1,08750105	1,33675827	1,18660974
Phosphorylase b kinase gamma catalytic chain, liver/testis isoform GN=PHKG2	1,02924084	1,0981627	1,09831791	0,95789593	0,94426104	0,90357429	0,94486968
Plasma kallikrein GN=KLKB1	1,32103596	1,23361371	0,90331073	1,31924578	0,82031462	0,97503678	0,75309046
Alpha-1B-glycoprotein GN=A1BG	1,71456452	1,39485475	1,24940327	0,84036572	1,32408127	1,12317253	1,40544625
Complement C3 GN=C3	0,89820951	0,83865251	1,14682683	0,79621843	1	0,95174002	0,849795
Complement component C9 GN=C9	1,00971675	0,96779294	1,14251966	1,11426181	0,87637856	1,0829891	1,10649676
Hemopexin GN=HPX	1,06028958	0,97125463	1,13001392	1,25809145	1,14035433	1,11620562	0,90591344
Complement factor D GN=CFD	1,16861298	1,82532927	1,28833959	1,27830995	0,99215704	1,11637169	1,02993384
Adiponectin GN=ADIPOQ	0,92181485	1,2540773	0,9034137	1,01344504	1,13375963	0,94696575	0,95459627
Fetuin-B GN=FETUB	1,30869819	0,85295435	1,08878344	0,73340577	1,49253182	1,01706878	1,18603997
Follistatin-related protein 1 GN=FSTL1	1,41338163	1,21033419	1,29052214	0,75819695	0,99457168	1,02493387	0,80031314
Alpha-2-macroglobulin GN=A2M	1,15540021	1,02265731	1,00761776	0,95935103	1,0812906	1,05084431	1,1620119
Peroxiredoxin-2 GN=PRDX2	1,05468195	1,26080001	1,05239018	0,73728955	1,50177876	1,15758468	1,15523874
Serpin A3-1 GN=SERPINA3-1	0,8371164	0,89827571	0,90284205	1,15519655	0,83465248	0,88292508	0,85781493
IGLL1 protein GN=IGLL1	0,91441217	1,00987495	0,89399587	1,05277249	1,0113219	0,95363868	0,97107216
Putativeuncharacterizedprotein	1,03678256	0,87587509	0,89705614	0,9657299	1,16931319	0,93510429	1,084441
Complement component 4 binding protein, alpha chain GN=C4BPA	1,06614452	0,73056794	1,27651368	1,1131563	0,850524	0,88146794	0,60847305
Fibrinogen alpha chain GN=FGA	0,91579494	0,73660806	0,88516483	1,04753455	1,17151523	0,97786648	0,99357622
Putativeuncharacterizedprotein	0,95694524	1,00188282	0,91577922	1,09434079	1,09637212	0,9940643	1,06538925
LOC786832 protein GN=LOC786832	0,61742931	0,85864574	0,73926258	1,17157338	1,00107632	0,82284637	0,90863797
CD5L protein GN=CD5L	1,66296538	1,30674069	1,43445752	1,05667165	1,58454261	1,20351818	1,38570683
SERPIND1 protein GN=SERPIND1	1,45743727	1,23268601	1,25806958	1,11951659	1,16128214	1,29174057	1,15043778
C22H3ORF23 protein GN=C22H3ORF23	0,39334459	0,64650894	0,49308231	1,12650106	0,48086442	0,61594822	0,99948252
LOC535277 protein GN=LOC535277	1,08306315	0,98949654	1,01584234	0,92019208	1,03592944	1,13677453	1,14479087
Alpha-2-HS-glycoprotein GN=AHSG	1,24576809	0,96956553	0,99298829	0,76883174	0,5550486	1,01097288	0,92790032
C-reactive protein GN=CRP	0,93596127	1,04002856	1,11806131	0,96303424	0,91309484	0,80250764	1
Hemoglobin beta GN=HBB	2,38754336	1,69140941	1,23530474	0,82654362	1,46862758	1,29572426	1,37747888

Pleckstrin homology domain containing family GN=PLEKHH3	0,96711887	1,00466923	0,98024274	0,91727303	1,01592085	0,9072973	1,09626688
Cytochrome C	0,40226699	3,07317521	0,76292591	0,42528855	0,40392158	0,42806077	0,50389168
Croccprotein GN=CROCC	1,01028137	1,20009489	1,00399313	0,86053589	1,09571345	1,04529646	1,16723015
Uncharacterizedprotein (Fragment)	0,88230976	0,9434448	0,80259033	1,29733751	0,67812752	0,97099872	0,94678625
Uncharacterizedprotein GN=LOC617696	1,07814561	0,98467221	1,07053216	1,10423585	0,91751621	1,08058411	1,03767676
Protein Srbd1 GN=SRBD1	1,05922431	1,03544112	1,062834	0,9665238	0,98337964	1,011617	1,02418364
E3 ubiquitin-protein ligase HECTD1 GN=HECTD1	0,97702554	1,03693932	0,88344699	0,88359633	1,00441158	1,01529479	1,00550339
Uncharacterizedprotein GN=Bt.110587	0,80016618	1,07814531	0,82599745	0,9123561	0,86288149	0,92303948	0,98776618
Vasohibin 2 GN=VASH2	0,18809872	0,65711253	0,78566918	0,82528486	0,95522954	0,7953581	0,64630502
Uncharacterizedprotein GN=FHOD3	0,80815823	0,96082527	0,94000302	0,89910657	0,92131844	0,90135639	0,91032519
Sidekick 1 GN=SDK1	0,84270964	1,18287909	0,86195014	0,74444936	0,96442408	1,02885482	1,06829092
Acidic mammalian chitinase GN=CHIA	1,22627848	1,01242897	1,14458308	1,15878685	1,11000082	1,141119	1,22349164
Complement C1s subcomponent GN=C1S	0,93786454	1,06664488	0,95418836	1,08337564	0,82536212	0,99602866	1,01786234
Uncharacterizedprotein GN=LOC506828	0,88586252	0,87250077	0,97850309	1,11160127	0,88172429	0,9356648	0,93320452
Histidine-rich glycoprotein GN=HRG	0,99888477	0,9150767	0,64414128	0,73223065	1,09532314	0,92081216	0,75563163
Immunoglobulin GN=IGLL1	0,93952768	1,01106046	0,90906752	1,05216665	1,05593402	0,97105614	1,01939654
Uncharacterizedprotein GN=LOC100847119	0,96877968	0,93507845	0,86928887	1,07186087	1,0796903	0,96568815	1,04824515
Myosin Heavy Chain 14 GN=MYH14	0,88266035	1,07745015	0,81821121	0,94800156	0,94036078	0,97612236	0,91974803
Complement component C6 GN=C6	1,09212587	0,97763179	1,00225794	1,02463641	0,98116606	1,03028987	1,03897018
Protein AMBP GN=AMBP	1,00841477	1,03530318	1,1323844	1,02297469	0,92181116	0,96240968	0,86891073
Inter-alpha-trypsin inhibitor heavy chain H1 GN=ITIH1	0,94837362	0,88983274	1,07352843	0,94684322	1,08284624	0,93764709	1,00558288
Inter-alpha-trypsin inhibitor heavy chain H2 GN=ITIH2	0,89938633	0,92295959	1,13775978	0,93774222	1,18034434	1	0,95822298
Sirtuin 1 GN=SIRT1	1	1,10533338	0,9682645	0,92935072	1,06481381	1,04112225	1,02027346
Antithrombin-III GN=SERPINC1	1,06549334	0,99990308	1,01934961	0,81516942	0,97010087	1,0680758	1,03886025
Uncharacterizedprotein (Fragment)	1,00859579	1,0168449	0,99094018	1,1725584	0,79681262	1,06085641	0,99751709
Fibulin 1 GN=FBLN1	0,87881181	1,37788891	0,82546108	1,12349723	0,66122346	1,04239657	0,89667944
Uncharacterizedprotein GN=Bt.57604	1,06150154	0,8173801	0,89131972	1,54684032	1,09907313	1,00926663	0,35814483
Complement component C7 GN=C7	0,86081189	1,19459547	0,93089791	0,96954155	1,04317792	0,96606661	0,89280472
Ceruloplasmin GN=CP	0,96288843	1,40450854	1,27572284	1,46379381	1,09361597	1,41878517	1,36515786
Carbonic anhydrase 2 (Fragment) GN=CA2	1,15441067	0,89266612	0,89241033	0,53492453	1,1869922	0,83646413	0,89135552
C8B protein GN=C8B	1,04664415	0,90306759	1,10720954	0,90604802	1,11568092	1,09584449	1,20168588
Filamin A GN=FLNA	1,04823091	0,89758017	1,07990119	1,06784662	1,09387568	1,05670953	0,93989378
Gelsolin GN=GSN	1,12945205	1,01456609	0,95009499	1,07411569	1,05759208	1,02917622	1,07496537

Uncharacterizedprotein	0,96246724	1,71739077	1,04116425	1,20374121	0,5184632	1,12962483	1,09820976
Collagen alpha-2(V) chain GN=COL5A2	1,07835602	1,22058086	1,00111916	0,88373692	1,09048755	1,0350142	1,01721063
Apolipoprotein A-IV GN=APOA4	0,90491574	1,17399152	0,95700604	1,14074124	0,59559102	0,95785297	0,53503516
Vinculin =VCL	1,03157038	0,8673755	1,01665482	1,04551221	1,07577681	0,99362846	1,06959344
Uncharacterizedprotein (Fragment)	0,97224818	0,93164096	0,92722846	1,00296108	1,15702401	0,89832427	1,28798112
Growth Arrest Specific Protein 1 GN=GAS1	0,77447948	0,74198669	0,55811704	0,43688303	0,47074588	0,63382313	0,38545734
Afamin GN=AFM	1,03041631	0,88140425	1,07523261	0,83793909	1,0401758	0,98297061	1,10193065
Uncharacterizedprotein GN=LOC515150	0,67826257	0,63954423	0,99472114	0,85269236	0,54408682	0,83497013	0,6871922
Uncharacterized protein (Fragment) GN=Bt.97040	1,03313941	1,21145666	1,07100659	1,56613381	0,96138035	1,24444682	0,98986378
Immunoglobulinsuperfamily 1 GN=IGSF1	0,85953153	0,87192577	1,02972651	0,93912696	0,93961421	0,88841487	0,93962744
Serotransferrin	0,96105781	1,03691535	0,91503951	1,13596069	1,26710595	1,08630361	1,09408508
Uncharacterizedprotein (Fragment)	0,8923918	1,22692797	0,89553062	1,01691628	0,94181193	1,04573123	0,95111312
Uncharacterized protein (Fragment) GN=Bt.12809	2,03150274	1,30955117	1,55617562	1,0959624	1,71429466	1,35540227	1,48159442
Fibronectin GN=FN1	0,52666782	0,86575261	0,83343306	1,0342638	0,95785265	0,87678217	0,877705
Uncharacterizedprotein (Fragment)	1,8771727	1,3445488	1,52522148	1,06691836	1,62250247	1,3332192	1,33348084
Uncharacterizedprotein (Fragment)	0,99195008	1,35255404	0,96845437	1,09932455	1,10928961	1,12970459	1,02541624
Vitamin D bindingprotein	0,9568482	0,93106622	0,90325949	1,06377388	1,17370072	1,00481352	0,96748573
Alpha-2-macroglobulin variant 5 GN=A2M	1,02962833	0,99379381	1,04986795	1,07045445	0,74836179	1,06318376	1,29664134
Keratin, type II cytoskeletal 5 GN=KRT5	0,64918729	2,09190537	0,8529883	0,70382659	0,55473457	0,52979702	1,03493864
CDK5 regulatory subunit associated protein 1 GN=CDK5RAP1	0,86501611	0,91597099	0,87451529	0,90980186	0,65921975	0,87613801	0,90470818
Insulin-like growth factor binding protein acid labile subunit	1,05026842	0,98003693	1,10364444	0,96170528	0,98986393	0,9762197	1,02993006
Placentallactogen (Fragment)	0,83977802	0,75765315	1,12739352	0,74892957	1,04219424	1,18860898	1,15984058
Leucine-rich alpha-2-glycoprotein 1 GN=LRG1	0,97786567	1,01658532	0,84026181	1	0,92079695	0,99021718	0,88019987
Paraoxonase 1 GN=PON1	0,896255	0,88313087	1,13243352	0,75670455	0,92833769	0,82909823	1,00187073
RBP4 protein GN=RBP4	1,02096148	1,08253137	0,86353801	1,15214951	1,11905437	0,89857446	0,80584246
Complement factor I GN=CFI	1,10680428	1	0,99937675	1,22601462	1,20829717	0,94009847	0,95299223
Endopin 2C	0,66727951	0,73811153	0,74293571	1,20763795	1,06431539	0,81122655	0,6993168
Amylase, alpha 2A (Pancreatic) GN=AMY2A	1,60178301	0,78841701	1,15145626	1,0586048	1,34321324	1,23194277	1,29453578
Immunoglobulin J chain GN=IGJ	1,54827628	1,42551367	1,31968924	0,93149478	1,57926413	1,37397101	1,45195305
IGL@ protein GN=IGL@	0,95689942	1,03671655	0,9114874	1,08532143	1,09705577	1,00114977	1,0510577
Vitronectin GN=VTN	0,98195411	1,0749291	1,08903296	0,99029251	0,87812561	0,95479707	0,94914803
Uncortin GN=UCN	0,98535323	1,21950648	1,1886985	1,01349283	1,08412473	1,03518294	1,14705859

Inter-alpha (Globulin) inhibitor H4 GN=ITIH4	1,08311263	1,00459997	1,32031948	1,62983621	0,93335437	1,26035833	1,62139791
Alpha-1 acid glycoprotein GN=agp	0,73302256	0,79078598	0,62464525	1,0545827	0,65043838	1,08988164	0,67098292
TrophoblastKunitz domain protein 5 (Fragment) GN=TKDP5	1,14538719	0,93150539	1,03586684	1,08047287	1,12681377	1,07965842	1,01624452