

Supplementary Material for:

## **Immune-inflammatory proteome of elite ice hockey players before and after SARS-CoV-2 infection**

Debbie J. Maurer\*, Elena Barletta\*, Anja Heider, Nino Stocker, Alexandra Wallimann, Michael Villiger, Beat Villiger, Katja Bärenfaller, Cezmi A. Akdis, Walter Kistler

\*Maurer and Barletta equal first author contribution

### **Material and Methods**

#### *Patient samples*

Serum samples of 24 ice hockey players were obtained at two time points: 1) in late September 2021, just after the start of the National League's (top Swiss ice hockey league) competitive season, and in late January/early February 2022, after the players had contracted SARS-CoV-2 in the last week of December 2021. Non-hospitalized sex-matched non-ice hockey player control subjects who got infected during the same time were recruited by Davos hospital, and serum samples were obtained 1-2 weeks after SARS-CoV-2 infection. Blood samples were centrifuged at 1300 g for 10 minutes at room temperature, the supernatant (serum) was transferred into tubes, which were frozen and stored at -80 °C.

#### *Serum targeted proteomics*

Serum samples were analyzed using the OLINK (OLINK Bioscience, Uppsala, Sweden) panels immune response and inflammation. Each panel is capable of measuring 92 protein biomarkers, and 4 proteins overlapped in the two panels. Proximity extension assay (PEA) technology was used according to OLINK's instructions. Protein levels are expressed as Normalized Protein eXpression (NPX) .

#### *Statistical analyses*

NPX data from the immune response and inflammation OLINK panels were imported and processed with the "OlinkAnalyze" R package from OLINK-Proteomics. Statistical analysis and graphical designs were performed, respectively, using the "stats" and "ggplot2" R packages. The Welch 2-sample t-test (confidence level 0.95) was used to compare pre- and post-COVID-19 ice hockey player samples, as well as post-COVID-19 samples of control individuals and ice hockey players. For multiple testing correction, the Benjamini-Hochberg method was used, and an adjusted p-value <0.05 was set as cut-off for statistically significant proteins. For different functional categories, the ratio of significantly changing proteins over all the proteins present in the list of 180 measured proteins assigned to the respective functional category was calculated from the MetaCore™ software results.

	Post-COVID-19 Ice Hockey Players (n=24)	Post-COVID-19 Controls (n=20)
Leukocytes (G/l)	6.0 +- 1.0	6.5 +- 1.5
Erythrocytes (T/l)	5.4 +- 0.3	5.4 +- 0.3
Platelets (G/l)	232.0 +- 38.6	290.0 +- 44.2
Hct (l/l)	0.46 +- 0.02	0.46 +- 0.02
Hb (g/l)	159.3 +- 7.0	159.7 +- 8.9
MCV (fl)	85.6 +- 2.3	85.7 +- 3.5
MCH (pg)	29.5 +- 1.0	29.6 +- 1.3
MCHC (g/l)	344.1 +- 8.2	345.8 +- 7.9
CRP (mg/l)	0.8 +- 1.0	1.2 +- 1.0
AST (U/l)	28.2 +- 3.7	28.6 +- 10.5
ALT (U/l)	27.4 +- 10.0	38.0 +- 28.7
Troponin I hs (ng/l)	4.3 +- 9.6	2.7 +- 3.7
NT-proBNP (ng/l)	28.5 +- 15.6	49.0 +- 70.2
Creatinine (umol/l)	93.3 +- 9.5	81.2 +- 8.6
GFR (ml/min)	98.4 +- 11.9	109.7 +- 10.8
Sodium (mmol/l)	140.7 +- 1.3	141.7 +- 1.6
Potassium (mmol/l)	3.9 +- 0.2	3.9 +- 0.2

**Table S1: Clinical laboratory serum analyses.** The clinical laboratory parameters in general show similar levels in both groups, and are within the normal range. Values are depicted as mean +- standard deviation. Abbreviations: ALT, alanine transaminase; AST, aspartate transaminase; CRP, C-reactive protein; GFR, glomerular filtration rate; Hb, hemoglobin; Hct, hematocrit; hs, high sensitive; MCV, mean corpuscular volume; MCH, mean corpuscular hemoglobin; MCHC, mean corpuscular hemoglobin concentration; NT-proBNP, N-terminal pro b-type natriuretic peptide.



## T-test: Ice Hockey Pre-COVID-19 versus Ice Hockey Post-COVID-19

Assay	OLinkID	UniProt	Panel	estimate	Post	Pre	statistic	p-value	parameter	conf.low	conf.high	method	alternative	Adjusted	aval	Threshold
PNS4A	OL00082	Q294C42	Click Target 96 Immune Response	-2.8001875	3.40697683	6.69759333	-1.8529491	2.227618	32.4956075	-2.6941556	1.96028194	Welch Two Sample t-test	two.sided	4.0027611	11	Significant
OL00478	P13172	Q13732	Click Target 96 Immune Response	-0.0434727	3.3931327	4.3891	-0.0000000	0.9100044	4.7702486	-0.413638	1.77730019	Welch Two Sample t-test	two.sided	3.8881428	14	Significant
ST1A1	P05025	Q13732	Click Target 96 Immune Response	-2.2603875	2.91545875	5.16381047	-1.87636795	5.7018810	40.4077426	-2.82030018	1.67120316	Welch Two Sample t-test	two.sided	3.424911-08	Significant	
TPH314	OL00506	Q14037	Click Target 96 Immune Response	-1.40748602	6.16133933	7.5689295	-1.2662883	1.6421136	45.8999764	-1.79726526	0.91756057	Welch Two Sample t-test	two.sided	1.168951-07	Significant	
ED04	OL00442	Q13732	Click Target 96 Immune Response	-1.73129125	2.8188125	4.54912075	-1.4415947	8.754558-08	-1.8098122	-0.93749928	0.9345584	Welch Two Sample t-test	two.sided	3.511641-06	Significant	
CD30	OL00502	P25042	Click Target 96 Immune Response	-0.1208462	11.4844135	11.3295024	-0.59973885	1.1723678	45.7458909	-0.8506296	0.27609374	Welch Two Sample t-test	two.sided	3.458891-05	Significant	
PKRC12	OL00089	Q04079	Click Target 96 Immune Response	-0.9488292	0.91504853	1.9112675	-0.68480758	1.3451236	39.6093461	-1.3480776	0.4108808	Welch Two Sample t-test	two.sided	3.458981-05	Significant	
CDP-8	OL00501	P25042	Click Target 96 Immune Response	-0.152575	8.801902083	8.95770825	-0.152575	8.801902083	8.95770825	-0.152575	8.801902083	Welch Two Sample t-test	two.sided	4.00791-06	Significant	
CLC23	OL00503	P53773	Click Target 96 Immune Response	-0.5299075	10.7166525	11.2465265	-0.4046011	7.994246	46.2461677	-0.7408032	0.3101893	Welch Two Sample t-test	two.sided	0.00319965	Significant	
ZB165	OL00505	Q05536	Click Target 96 Immune Response	0.59478047	1.7791275	1.3464383	4.80478386	1.95086-05	37.653881	0.34825588	0.84126039	Welch Two Sample t-test	two.sided	0.0003101	Significant	
BTNA2	OL00217	Q14140	Click Target 96 Immune Response	-0.2601237	3.35021657	3.6107375	-0.143638	1.7653257	2.030705	-0.4582745	0.167187	Welch Two Sample t-test	two.sided	0.0043013	Significant	
SPRY2	OL00998	Q14530	Click Target 96 Immune Response	0.1567863	1.95151567	2.4105147	-0.4603314	2.925555	45.8031133	0.663606	-0.2606069	Welch Two Sample t-test	two.sided	0.00043882	Significant	
ITGA6	OL00939	P32329	Click Target 96 Immune Response	-0.3850525	2.1388515	2.5251265	-0.3154305	8.76526-05	45.9778984	-0.4943610	0.1749441	Welch Two Sample t-test	two.sided	0.00017765	Significant	
IGS11	OL00941	P25042	Click Target 96 Immune Response	-0.4132915	2.8188125	2.4037325	-0.6100642	8.754558-08	-1.8098122	-0.27170852	0.9345584	Welch Two Sample t-test	two.sided	0.00107765	Significant	
IRAK4	OL00940	Q9NWE3	Click Target 96 Immune Response	0.5318025	1.6730285	1.09128	0.41043337	8.894015	35.9371607	0.11425027	0.8194547	Welch Two Sample t-test	two.sided	0.00017765	Significant	
STC1	OL00509	P5323	Click Target 96 Immune Response	-0.3121478	6.19749953	6.6964667	-0.2324029	0.00109214	45.9381969	-0.608183	0.2161557	Welch Two Sample t-test	two.sided	0.00021268	Significant	
CDP-8	OL00501	Q141790	Click Target 96 Immune Response	-0.645483	1.22531667	2.6077083	-0.41737613	0.00163759	44.7170017	-0.817606179	0.2161557	Welch Two Sample t-test	two.sided	0.00133914	Significant	
IRAK1	OL00950	P51617	Click Target 96 Immune Response	-0.3717971	1.82159547	2.13474583	-0.0316868	0.00209012	45.4641904	-0.5595678	0.18680155	Welch Two Sample t-test	two.sided	0.00209019	Significant	
DCN1	OL00954	Q14263	Click Target 96 Immune Response	0.69910167	1.48317917	3.68271625	3.97807047	0.00246223	45.7880236	0.34532994	1.05340289	Welch Two Sample t-test	two.sided	0.00232317	Significant	
PP1B08	OL00936	Q06083	Click Target 96 Immune Response	0.48774073	2.45971	2.06179683	1.3242235	0.00040002	45.4407781	0.32017994	0.744823859	Welch Two Sample t-test	two.sided	0.00369021	Significant	
PKAP3	OL00927	Q02108	Click Target 96 Immune Response	0.95190833	3.92908125	3.13389047	3.79614965	0.00044283	44.36073405	0.37122689	1.21275869	Welch Two Sample t-test	two.sided	0.00375687	Significant	
CLC12	OL0008	P4681	Click Target 96 Immune Response	-0.2695125	1.5461751	1.36886917	-0.42417154	0.00139989	44.6078734	-0.3374346	0.08613904	Welch Two Sample t-test	two.sided	0.01144708	Significant	
IRAK1	OL00950	P51617	Click Target 96 Immune Response	-0.47159625	2.47904467	2.00604152	-0.38192286	0.00149531	45.1204302	-0.19092294	0.75309666	Welch Two Sample t-test	two.sided	0.00574938	Significant	
TRIM5	OL00957	Q03035	Click Target 96 Immune Response	-0.46423167	1.64683933	2.1128675	-0.37800641	0.00176665	35.9642554	-0.7429577	0.1855076	Welch Two Sample t-test	two.sided	0.01252238	Significant	
CLC4A	OL00951	Q29AKW7	Click Target 96 Immune Response	0.3717973	3.7438725	4.06444833	-0.2579627	0.00130555	45.6109282	-0.5135082	0.1212334	Welch Two Sample t-test	two.sided	0.01533557	Significant	
TRAF2	OL00942	P14337	Click Target 96 Immune Response	0.6247777	4.8062763	4.43872917	3.7171359	0.00077353	45.020828	0.3809454	1.06663679	Welch Two Sample t-test	two.sided	0.01893966	Significant	
CLC4B	OL00963	Q12933	Click Target 96 Immune Response	0.3717973	2.778555	2.4009475	2.94852738	0.00034452	45.9998849	0.11982041	0.63391959	Welch Two Sample t-test	two.sided	0.03356348	Significant	
SH2	OL00538	Q0806	Click Target 96 Immune Response	-0.3730125	3.97699283	4.52107583	-1.80717965	0.00726013	45.7151664	-0.9835285	0.16207215	Welch Two Sample t-test	two.sided	0.04705727	Significant	
CDP-8	OL00501	P25042	Click Target 96 Immune Response	-0.223800	10.32048475	10.47332	-0.1747534	0.0014647	45.971473	-0.41004766	0.21004766	Welch Two Sample t-test	two.sided	0.00017765	Significant	
NO680	OL00502	P06880	Click Target 96 Immune Response	0.2432015	1.87941957	1.63027917	2.58205167	0.01466555	41.1104956	0.057803126	0.43373174	Welch Two Sample t-test	two.sided	0.00879318	Non-significant	
PIEHR	OL00945	Q0341	Click Target 96 Immune Response	-0.0773542	4.27348215	4.6027767	-1.51517201	0.0000000	45.9953163	-0.3738881	0.0414802	Welch Two Sample t-test	two.sided	0.00842033	Significant	
TRAF1	OL00966	Q06807	Click Target 96 Immune Response	0.3717973	2.87977917	3.16602583	0.16460371	0.0014647	45.9953163	0.0414802	0.0414802	Welch Two Sample t-test	two.sided	0.00842033	Significant	
NO658	OL00508	P0658	Click Target 96 Immune Response	0.14099917	1.2577271	1.38677083	0.25779081	0.00166024	43.8878725	-0.250946	0.02690374	Welch Two Sample t-test	two.sided	0.00842033	Non-significant	
OSM	OL00946	P13725	Click Target 96 Immune Response	-0.1637885	6.2201577	6.8693975	-0.2474223	0.01712609	49.7257135	-1.11947379	0.1510977	Welch Two Sample t-test	two.sided	0.00842033	Significant	
NOX8	OL00118	Q058	Click Target 96 Immune Response	-0.1637885	6.2201577	6.8693975	-0.2474223	0.01712609	49.7257135	-1.11947379	0.1510977	Welch Two Sample t-test	two.sided	0.00842033	Significant	
SPT1	OL00103	Q09798	Click Target 96 Immune Response	0.1781475	1.7171525	1.1933735	2.41282842	0.00202729	42.451943	0.02919208	0.327102492	Welch Two Sample t-test	two.sided	0.01118645	Non-significant	
NO92	OL0094	P13725	Click Target 96 Immune Response	0.3517433	6.2201577	1.0851547	2.40138695	0.00202729	42.451943	0.02919208	0.327102492	Welch Two Sample t-test	two.sided	0.01118645	Non-significant	
NO92	OL0094	P13725	Click Target 96 Immune Response	0.3517433	6.2201577	1.0851547	2.40138695	0.00202729	42.451943	0.02919208	0.327102492	Welch Two Sample t-test	two.sided	0.01118645	Non-significant	
NO92	OL0094	P13725	Click Target 96 Immune Response	0.3517433	6.2201577	1.0851547	2.40138695	0.00202729	42.451943	0.02919208	0.327102492	Welch Two Sample t-test	two.sided	0.01118645	Non-significant	
NO92	OL0094	P13725	Click Target 96 Immune Response	0.3517433	6.2201577	1.0851547	2.40138695	0.00202729	42.451943	0.02919208	0.327102492	Welch Two Sample t-test	two.sided	0.01118645	Non-significant	
NO92	OL0094	P13725	Click Target 96 Immune Response	0.3517433	6.2201577	1.0851547	2.40138695	0.00202729	42.451943	0.02919208	0.327102492	Welch Two Sample t-test	two.sided	0.01118645	Non-significant	
NO92	OL0094	P13725	Click Target 96 Immune Response	0.3517433	6.2201577	1.0851547	2.40138695	0.00202729	42.451943	0.02919208	0.327102492	Welch Two Sample t-test	two.sided	0.01118645	Non-significant	
NO92	OL0094	P13725	Click Target 96 Immune Response	0.3517433	6.2201577	1.0851547	2.40138695	0.00202729	42.451943	0.02919208	0.327102492	Welch Two Sample t-test	two.sided	0.01118645	Non-significant	
NO92	OL0094	P13725	Click Target 96 Immune Response	0.3517433	6.2201577	1.0851547	2.40138695	0.00202729	42.451943	0.02919208	0.327102492	Welch Two Sample t-test	two.sided	0.01118645	Non-significant	
NO92	OL0094	P13725	Click Target 96 Immune Response	0.3517433	6.2201577	1.0851547	2.40138695	0.00202729	42.451943	0.02919208	0.327102492	Welch Two Sample t-test	two.sided	0.01118645	Non-significant	
NO92	OL0094	P13725	Click Target 96 Immune Response	0.3517433	6.2201577	1.0851547	2.40138695	0.00202729	42.451943	0.02919208	0.327102492	Welch Two Sample t-test	two.sided	0.01118645	Non-significant	
NO92	OL0094	P13725	Click Target 96 Immune Response	0.3517433	6.2201577	1.0851547	2.40138695	0.00202729	42.451943	0.02919208	0.327102492	Welch Two Sample t-test	two.sided	0.01118645	Non-significant	
NO92	OL0094	P13725	Click Target 96 Immune Response	0.3517433	6.2201577	1.0851547	2.40138695	0.00202729	42.451943	0.02919208	0.327102492	Welch Two Sample t-test	two.sided	0.01118645	Non-significant	
NO92	OL0094	P13725	Click Target 96 Immune Response	0.3517433	6.2201577	1.0851547	2.40138695	0.00202729	42.451943	0.02919208	0.327102492	Welch Two Sample t-test	two.sided	0.01118645	Non-significant	
NO92	OL0094	P13725	Click Target 96 Immune Response	0.3517433	6.2201577	1.0851547	2.40138695	0.00202729	42.451943	0.02919208	0.327102492	Welch Two Sample t-test	two.sided	0.01118645	Non-significant	
NO92	OL0094	P13725	Click Target 96 Immune Response	0.3517433	6.2201577	1.0851547	2.40138695	0.00202729	42.451943	0.02919208	0.327102492	Welch Two Sample t-test	two.sided	0.01118645	Non-significant	
NO92	OL0094	P13725	Click Target 96 Immune Response	0.3517433	6.2201577	1.0851547	2.40138695	0.00202729	42.451943	0.02919208	0.327102492	Welch Two Sample t-test	two.sided	0.01118645	Non-significant	
NO92	OL0094	P13725	Click Target 96 Immune Response	0.3517433	6.2201577	1.0851547	2.40138695	0.00202729	42.451943	0.02919208	0.327102492	Welch Two Sample t-test	two.sided	0.01118645	Non-significant	
NO92	OL0094	P13725	Click Target 96 Immune Response	0.3517433	6.2201577	1.0851547	2.40138695	0.00202729	42.451943	0.02919208	0.327102492	Welch Two Sample t-test	two.sided	0.01118645	Non-significant	
NO92	OL0094	P13725	Click Target 96 Immune Response	0.3517433	6.2201577	1.0851547	2.40138695	0.00202729	42.451943	0.02919208	0.327102492	Welch Two Sample t-test	two.sided	0.01118645	Non-significant	
NO92	OL0094	P13725	Click Target 96 Immune Response	0.3517433	6.2201577	1.0851547	2.40138695	0.00202729	42.451943	0.02919208	0.327102492	Welch Two Sample t-test	two.sided	0.01118645	Non-significant	
NO92	OL0094	P13725	Click Target 96 Immune Response	0.3517433	6.2201577	1.0851547	2.40138695	0.00202729	42.451943	0.02919208	0.327102492	Welch Two Sample t-test	two.sided	0.01118645	Non-significant	
NO92	OL0094	P13725	Click Target 96 Immune Response	0.3517433	6.2201577	1.0851547	2.40138695	0.00202729	42.451943	0.02919208	0.327102492	Welch Two Sample t-test	two.sided	0.01118645	Non-significant	
NO92	OL0094	P13725	Click Target 96 Immune Response	0.3517433	6.2201577	1.0851547	2.40138695	0.00202729	42.451943							

T-test: Ice Hockey Post-COVID-19 versus Non-Ice Hockey Controls Post-COVID-19

Assay	OldId	UnProt	Panel	estimate	CutI	statistic	p.value	parameter	conf.low	conf.high	method	alternative	Adjusted pval	Threshold	threshold	differenced	
CL11	000010	P5075	Click Target 96 information	0.3824937	1.907805	8.5246615	0.83021474	1.94738E-06	40.8307801	0.2282394	0.54074639	Welch Two Sample t-test	two-sided	0.00350491	Non-significant	FALSO	DOWN
MMP-1	000010	P5076	Click Target 96 information	0.3074125	1.8074282	3.64747137	0.000377	1.74607348	0.2878782	1.00713397	Welch Two Sample t-test	two-sided	0.01429927	Non-significant	FALSO	DOWN	
TRF9P9	000053	Q0701	Click Target 96 information	0.0051483	6.559596	6.90970683	3.30762948	0.00317881	4.9042396	0.56382514	0.13705052	Welch Two Sample t-test	two-sided	0.11627281	Significant	FALSO	UP
KIT19	000067	P0072	Click Target 96 immune Response	0.17907583	1.412426	3.7931583	0.05782743	0.03880889	41.5304678	1.27237679	0.23076738	Welch Two Sample t-test	two-sided	0.17504699	Non-significant	FALSO	UP
CC15	000090	P0073	Click Target 96 information	0.44324683	6.961963	2.83242483	0.00179803	0.00179803	0.19971076	0.00179803	0.00179803	Welch Two Sample t-test	two-sided	0.03450961	Non-significant	FALSO	DOWN
PLN4A	000098	CHM42	Click Target 96 immune Response	0.58809417	4.898485	4.36097483	2.39857356	0.02136577	48.1514827	0.00921176	0.70469107	Welch Two Sample t-test	two-sided	0.03450961	Non-significant	FALSO	DOWN
SPRY2	000098	Q4397	Click Target 96 immune Response	0.27004333	2.221797	1.95315167	2.767488186	0.02297129	38.0171948	0.03913256	0.5007784	Welch Two Sample t-test	two-sided	0.03450961	Non-significant	FALSO	DOWN
PRD3	000095	P5075	Click Target 96 information	0.3315435	1.6440021	0.9645435	0.2124748	0.02125511	40.1220967	0.00531881	0.00531881	Welch Two Sample t-test	two-sided	0.03450961	Non-significant	FALSO	DOWN
CL23	000030	P5373	Click Target 96 information	0.3211005	1.7016625	2.34404109	0.04372882	0.37800793	0.00316028	0.04303972	Welch Two Sample t-test	two-sided	0.03450961	Non-significant	FALSO	DOWN	
CCD4P	000098	CHM58	Click Target 96 information	0.2891833	2.627935	2.8801592	2.7320632	0.02503637	25.8511341	0.03844572	0.52098625	Welch Two Sample t-test	two-sided	0.03450961	Non-significant	FALSO	DOWN
DNR1	000113	P0076	Click Target 96 information	0.11355	9.26034	1.78895	2.1284458	0.02544121	39.2564246	0.1240246	0.01497754	Welch Two Sample t-test	two-sided	0.03450961	Non-significant	FALSO	DOWN
TRM5	000057	Q0535	Click Target 96 immune Response	0.2216167	1.86998	1.46883583	2.30040762	0.00272471	4.00627483	0.01527903	0.01527903	Welch Two Sample t-test	two-sided	0.03450961	Non-significant	FALSO	DOWN
UPF	000051	P4270	Click Target 96 information	0.14304547	4.295415	4.2657797	2.2886367	0.00179434	39.6403141	0.25242465	0.01566787	Welch Two Sample t-test	two-sided	0.03450961	Non-significant	FALSO	UP
LPTS	000074	P0076	Click Target 96 information	0.2407585	2.677085	2.94324943	2.23778803	0.03665573	31.9571902	0.46863616	0.0279551	Welch Two Sample t-test	two-sided	0.03450961	Non-significant	FALSO	UP
JFA	000041	P0049	Click Target 96 information	0.1459375	1.7016625	1.0746375	2.57506281	0.00905288	32.1159137	0.27687005	0.01499843	Welch Two Sample t-test	two-sided	0.03450961	Non-significant	FALSO	UP
CD5N	000060	Q1351	Click Target 96 immune Response	0.325575	4.088135	4.405925	2.2584441	0.0300039	38.5027254	-0.012150975	0.01252645	Welch Two Sample t-test	two-sided	0.03450961	Non-significant	FALSO	DOWN
KCP-1	000049	P0075	Click Target 96 information	0.2404545	1.1577205	1.091665	2.2437873	0.0342829	40.2051132	0.00080771	0.00181729	Welch Two Sample t-test	two-sided	0.03450961	Non-significant	FALSO	DOWN
KL01	000059	Q1324	Click Target 96 immune Response	0.357764	6.531705	6.88745	2.2432583	0.03323419	35.9511439	0.68070197	0.02909403	Welch Two Sample t-test	two-sided	0.03450961	Non-significant	FALSO	UP
LLR8A	000060	CHM66	Click Target 96 immune Response	0.2115483	3.020515	2.80841667	2.1954106	0.06312956	29.97377	0.01442831	0.40871346	Welch Two Sample t-test	two-sided	0.03450961	Non-significant	FALSO	DOWN
AIN1	000087	Q1569	Click Target 96 information	0.0410583	3.626785	3.8078757	2.16445149	0.06425329	41.7160279	0.0207603	0.0145164	Welch Two Sample t-test	two-sided	0.03450961	Non-significant	FALSO	DOWN
MGM7	000090	P1455	Click Target 96 immune Response	0.23539	4.366041	3.8401025	2.16773285	0.05485482	0.00080384	0.01446916	0.01446916	Welch Two Sample t-test	two-sided	0.03450961	Non-significant	FALSO	DOWN
ALC5	000051	Q1544	Click Target 96 information	-0.20362447	7.15551	7.6807547	2.13507389	0.0873463	41.425538	0.06263556	0.01741527	Welch Two Sample t-test	two-sided	0.03450961	Non-significant	FALSO	DOWN
KCP-1	000049	P0075	Click Target 96 information	0.2415767	1.80175	3.15337663	2.0156671	0.00201643	41.772937	0.01004034	0.02430321	Welch Two Sample t-test	two-sided	0.03450961	Non-significant	FALSO	DOWN
TRANCE	000059	P0568	Click Target 96 information	0.15415283	1.002525	1.25777257	2.0002869	0.0531486	37.6864245	-0.00152823	0.02849802	Welch Two Sample t-test	two-sided	0.03451005	Non-significant	FALSO	DOWN
TRANCE	000051	Q1478	Click Target 96 information	0.3060383	5.79084	6.0944708	1.9701636	0.0658552	37.5723709	0.01873878	0.00853252	Welch Two Sample t-test	two-sided	0.03488597	Non-significant	FALSO	DOWN
TPS81	000041	Q1561	Click Target 96 immune Response	0.35723497	4.847045	4.61109583	1.9409591	0.0536305	38.4848978	0.0163668	0.79447687	Welch Two Sample t-test	two-sided	0.03488597	Non-significant	FALSO	DOWN
NCR1	000037	Q0366	Click Target 96 immune Response	0.2299283	3.61025	3.5315883	1.87453174	0.0697048	34.380028	0.4789726	0.01239599	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
HF	000048	QF	Click Target 96 information	0.284166	4.87039	4.87039	2.8456817	0.0093443	39.793423	0.01384647	0.01384647	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
TRF5F14	000037	Q0366	Click Target 96 information	0.1338433	3.192195	1.51813467	1.77436914	0.0681751	31.6729427	-0.01690029	0.02459897	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
TRF5F14	000036	Q4357	Click Target 96 information	0.1338433	3.192195	1.51813467	1.77436914	0.0681751	31.6729427	-0.01690029	0.02459897	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
WAP1	000085	P0076	Click Target 96 information	0.1777008	4.48343	4.611583	1.7525089	0.0684456	39.9880145	0.00931478	0.69391812	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
CD7N1	000085	Q1403	Click Target 96 immune Response	0.27390791	1.777008	1.777008	2.4466621	0.0094609	39.795056	0.01457075	0.01457075	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
CD7N1	000085	Q1403	Click Target 96 immune Response	0.27390791	1.777008	1.777008	2.4466621	0.0094609	39.795056	0.01457075	0.01457075	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
CD7N1	000085	Q1403	Click Target 96 immune Response	0.27390791	1.777008	1.777008	2.4466621	0.0094609	39.795056	0.01457075	0.01457075	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
CD7N1	000085	Q1403	Click Target 96 immune Response	0.27390791	1.777008	1.777008	2.4466621	0.0094609	39.795056	0.01457075	0.01457075	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
CD7N1	000085	Q1403	Click Target 96 immune Response	0.27390791	1.777008	1.777008	2.4466621	0.0094609	39.795056	0.01457075	0.01457075	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
CD7N1	000085	Q1403	Click Target 96 immune Response	0.27390791	1.777008	1.777008	2.4466621	0.0094609	39.795056	0.01457075	0.01457075	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
CD7N1	000085	Q1403	Click Target 96 immune Response	0.27390791	1.777008	1.777008	2.4466621	0.0094609	39.795056	0.01457075	0.01457075	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
CD7N1	000085	Q1403	Click Target 96 immune Response	0.27390791	1.777008	1.777008	2.4466621	0.0094609	39.795056	0.01457075	0.01457075	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
CD7N1	000085	Q1403	Click Target 96 immune Response	0.27390791	1.777008	1.777008	2.4466621	0.0094609	39.795056	0.01457075	0.01457075	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
CD7N1	000085	Q1403	Click Target 96 immune Response	0.27390791	1.777008	1.777008	2.4466621	0.0094609	39.795056	0.01457075	0.01457075	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
CD7N1	000085	Q1403	Click Target 96 immune Response	0.27390791	1.777008	1.777008	2.4466621	0.0094609	39.795056	0.01457075	0.01457075	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
CD7N1	000085	Q1403	Click Target 96 immune Response	0.27390791	1.777008	1.777008	2.4466621	0.0094609	39.795056	0.01457075	0.01457075	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
CD7N1	000085	Q1403	Click Target 96 immune Response	0.27390791	1.777008	1.777008	2.4466621	0.0094609	39.795056	0.01457075	0.01457075	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
CD7N1	000085	Q1403	Click Target 96 immune Response	0.27390791	1.777008	1.777008	2.4466621	0.0094609	39.795056	0.01457075	0.01457075	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
CD7N1	000085	Q1403	Click Target 96 immune Response	0.27390791	1.777008	1.777008	2.4466621	0.0094609	39.795056	0.01457075	0.01457075	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
CD7N1	000085	Q1403	Click Target 96 immune Response	0.27390791	1.777008	1.777008	2.4466621	0.0094609	39.795056	0.01457075	0.01457075	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
CD7N1	000085	Q1403	Click Target 96 immune Response	0.27390791	1.777008	1.777008	2.4466621	0.0094609	39.795056	0.01457075	0.01457075	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
CD7N1	000085	Q1403	Click Target 96 immune Response	0.27390791	1.777008	1.777008	2.4466621	0.0094609	39.795056	0.01457075	0.01457075	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
CD7N1	000085	Q1403	Click Target 96 immune Response	0.27390791	1.777008	1.777008	2.4466621	0.0094609	39.795056	0.01457075	0.01457075	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
CD7N1	000085	Q1403	Click Target 96 immune Response	0.27390791	1.777008	1.777008	2.4466621	0.0094609	39.795056	0.01457075	0.01457075	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
CD7N1	000085	Q1403	Click Target 96 immune Response	0.27390791	1.777008	1.777008	2.4466621	0.0094609	39.795056	0.01457075	0.01457075	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
CD7N1	000085	Q1403	Click Target 96 immune Response	0.27390791	1.777008	1.777008	2.4466621	0.0094609	39.795056	0.01457075	0.01457075	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
CD7N1	000085	Q1403	Click Target 96 immune Response	0.27390791	1.777008	1.777008	2.4466621	0.0094609	39.795056	0.01457075	0.01457075	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
CD7N1	000085	Q1403	Click Target 96 immune Response	0.27390791	1.777008	1.777008	2.4466621	0.0094609	39.795056	0.01457075	0.01457075	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
CD7N1	000085	Q1403	Click Target 96 immune Response	0.27390791	1.777008	1.777008	2.4466621	0.0094609	39.795056	0.01457075	0.01457075	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
CD7N1	000085	Q1403	Click Target 96 immune Response	0.27390791	1.777008	1.777008	2.4466621	0.0094609	39.795056	0.01457075	0.01457075	Welch Two Sample t-test	two-sided	0.04273993	Non-significant	FALSO	DOWN
CD7N1	000085	Q1403	Click Target 96 immune Response	0.27390791	1.777008	1.777008	2.44666										