

Expanded View Figures

Figure EV1. Density plot of Human Protein Atlas (Uhlén *et al*, 2015) transcript expression across tissues of promiscuous proteins versus non-promiscuous proteins.

We observe negligible differences between promiscuous and non-promiscuous distributions suggesting expression levels are not a factor contributing to the identification of promiscuous proteins.

GO:MF		stats		* * *																					2 . 2			
Term name	Term ID	Padj	a -log ₁₀ (p _{adj})	10000 PACING	83/08 100218	003407 85864 85872 848003	01024 03024 005558 002558	05691	581,15 581,18 581,18	22087 20648 13638	24250 23634 23434 22655	305319 300411 30038	35814 36573 36568 36567	39748 386446 33837	57649 49591 49594 89554	21952 64/102 61900	00000	133607	19782 19782	53+02 55836	57440 57282	TINET TRACE	NCNS ENVES	MARTE MARTE	0000	135696 135696 135696 135696	14775	10000 100000 100000 100000 100000 100000 100000 10000 10000 100000 100000 100000 100000 100000 100000 1000000
catalytic activity	GO:0003824	8.984×10 ⁻¹⁰																										
oxidoreductase activity	GO:0016491	5.858×10 ⁻⁴	-																									
																										1	0 2 of 2 🛛 🖂	< Page 1 of 1 > >1
GO:BP		stats																						0 0 0 0	8 . 8			
Term name	Term ID	Padj	-log ₁₀ (p _{adj})	15 15 15 15 15 15 15 15 15 15 15 15 15 1	40216 40216 40216	003367 05864 856372 94603	07/144 07/024 00554 00554	64036 16690	111216 111142 111142 111145	220907 20064.8 13053.9 111413	24290 23634 23634 23695	305210 30641 30034	35914 36573 35558 35557	39748 38646 38117 338177	41931	533657 533657	00581 90599 904437	13367	04086 04086	53+10-2 53+10-2 760-3-6	ST440	These These These	NCA'S DALTO	MCN1.2	10030	searci searci	14248 14248 14048	International In
small molecule metabolic process	GO:0044281	6.903×10 ⁻¹³																										
carboxylic acid metabolic process	GO:0019752	1.124×10 ⁻⁶																										
small molecule catabolic process	60:0044282	3.412×10 ⁻⁶																						_				
organic acid metabolic process	GO:0006082	5.633×10 ⁻⁶																										
oxoacid metabolic process	GO:0043435	6.633×10 ⁻⁶																										
oxidation-reduction process	60:0055114	6.307×10**		-																	_							
carbonydrave metabolic process	60:0008091	2 706×10-3	-	_									87 B.				_											
monoransharida matabalic process	00-0005996	2 102-10-2														_												
cellular amino acid metabolic process	60:0006520	3.102×10 ⁻²																										
organic acid catabolic process	GO:0016054	3.461×10 ⁻²																										
carboxylic acid catabolic process	GO:0046395	3.461×10 ⁻²																										
											_			_												1 to	12 of 12	< Panetoft > >)
90:00		stats																									TIT	
Term name	Term ID	Puti	-100-20(0-4)	000W	04821	01110	10001 10000 10000	0000	91121	P2104 P2564 P1564	92425 92363 92363 92363	P3052 P3052	100004 100004 100004	101114 111114 111114	N012 N012	10110 10110 10110	100111	01102	Q1678 Q1419 Q1419	01683	Q51128	Oliver Oliver	dave.	Olevica Olevica	00960 81980 81980	19900 CA890 DA800	0164/J	
mitesteadure	00/00/5720	0.700-10-5		#16 0 # U			0 0 0 0	003	0 0 10 0	0 0 0	0 1 1 0			9 9 8 8	A 0 2 0	4 0 0 0	003	299	a 0 10 -		0 0	u u u a	000	~	0 0 0	1 2 0 9 1		
mitochoodial matrix	60:0005759	3.017×10-5																-										
	00.0000000	0.011-10	_					-				-		_						_			_		_			
																										1	0 2 01 2 10	< Page 1 of 1 > >1
KEOO		stats																										
Term name	Term ID	Puel	-100++(0++)	00999	00000 046021 046021	09190	10004	01104	P1121	P2200 P2064 P1141	#23439 #2343 #2343	P3002	10000 F	10764	N010	10.104 10.154 10.154	00154 P0000	01300	01110	05340 016620	05114 05114	Cencil Cerum	Ganda o	CINE CONTR CONTR CONTR CONTR CONTR CONTR CONTR CONTRA	00940 61940 81840	0960 09897	09913 099034	09142 09402 09402
			a	116 0 0 10		0 0 4 0	0 0 0 0	003	9 0 0 0	0 0 0 0		9 3 0 4	4 8 9 8	9988		4 0 0 0	0 0 3 1		A 0 10 2	3 0 10 A	0 0 1		0 0 0			3 0 9 1		
Metabolic pathways	KEGG:01100	1.703×10																										
																										1	to 1 of 1 K	< Page 1 of 1 > >1
REAC		stats																							0.0			
Term name	Term ID	Padj	-log ₁₀ (p _{adj})	14	0000701 000218 143328	1953854 195322 195322	901024 900558 900393	6421PO4 068950	911236 911142 907185 908787	P22087 P20448 P33838 P31413	*21634 *23634 *23634	10003	135357 135357 135357	P28348 P28448 P284712 P27832	102214	298/54 66225	0015011 909889 976482	Q1367	Q15782 214195 214194	264114 263m82 264336	36947471 3514483 351282	41/101	Boores a	100113 INCODE INCODE	10016 611165 111116	2965L1	26,494	000262 000262 0000252 0000022 0000022 0000022 0000022 0000022 0000022 0000022 0000022 0000022 000002 000002 000002 000002 000002 000002 000002 000002 000002 000000
Metabolism						_	_	_		_		_					_	_		_		_		_	_	_	_	
	REAC:R-H\$A-1	4.966×10 ⁻⁸	1.000																									

Figure EV2. Annotation enrichment of older promiscuous proteins.

gProfiler output shows older promiscuous proteins are enriched for metabolic processing annotations.



Figure EV3. hu.MAP 2.0 complexes are functionally enriched.

The bar chart shows the number of identified complexes that are enriched with at least one annotation from GO, Reactome, CORUM, KEGG, or Human Phenotype Ontology (HP) at an FDR threshold of 0.05.

Figure EV4. SVM confidence score versus test set precision.

The line plot shows the relationship between the SVM confidence score, and the empirical precision value calculated from the test set of protein interactions. The relationship shows the precision value is consistently higher than the confidence score.



Figure EV4.