

Supplementary Material

**Table S1:** Number of similar proteins between humans and different organisms.

Organism	Total of proteins	Low stringency			High stringency		
		E-value					
		1 <sup>-10</sup>	1 <sup>-50</sup>	1 <sup>-100</sup>	1 <sup>-10</sup>	1 <sup>-50</sup>	1 <sup>-100</sup>
<i>H. sapiens</i>	75,074						
Pathogenic organisms							
<i>P. falciparum</i>	5,456	2769 (50.75)	955 (17.50)	322 (5.90)	103 (1.89)	81 (1.48)	41 (0.75)
<i>E. histolytica</i>	7,959	3357 (42.18)	1170 (14.70)	399 (5.01)	35 (0.44)	32 (0.40)	19 (0.24)
<i>G. intestinalis</i>	4,466	2209 (49.46)	685 (15.34)	172 (3.85)	17 (0.38)	15 (0.34)	11 (0.25)
<i>T. gondii</i>	8,404	3311 (39.40)	1357 (16.15)	517 (6.15)	118 (1.40)	107 (1.27)	61 (0.73)
<i>T. brucei brucei</i>	8,587	3711 (43.22)	1386 (16.14)	469 (5.46)	72 (0.84)	70 (0.82)	47 (0.55)
<i>T. cruzi</i>	19,242	3858 (20.05)	1426 (7.41)	499 (2.59)	75 (0.39)	73 (0.38)	48 (0.25)
<i>C. neoformans</i>	6,743	4734 (70.21)	2091 (31.01)	835 (12.38)	179 (2.65)	136 (2.02)	79 (1.17)
<i>B. malayi</i>	9,409	7828 (83.2)	4296 (45.66)	1815 (19.29)	318 (3.38)	285 (3.03)	147 (1.56)
<i>L. major</i>	8,038	3627 (45.12)	1360 (16.92)	451 (5.61)	72 (0.90)	70 (0.87)	45 (0.56)
<i>C. tetani</i>	2,415	1115 (46.17)	278 (11.51)	68 (2.82)	0 (0)	0 (0)	0 (0)
<i>C. botulinum</i>	3,590	1220 (33.98)	320 (8.91)	78 (2.17)	0 (0)	0 (0)	0 (0)
<i>C. perfringens</i>	2,721	1116 (41.01)	302 (11.10)	83 (3.05)	0 (0)	0 (0)	0 (0)
<i>N. meningitidis</i>	2,001	837 (41.83)	264 (13.19)	74 (3.70)	0 (0)	0 (0)	0 (0)
<i>N. gonorrhoeae</i>	2,106	794 (37.70)	241 (11.44)	71 (3.37)	0 (0)	0 (0)	0 (0)
<i>C. albicans</i>	6,035	4322 (71.62)	1881 (31.17)	707 (11.71)	161 (2.67)	118 (1.96)	70 (1.16)
<i>C. glabrata</i>	5,200	4060 (78.08)	1740 (33.46)	669 (12.87)	135 (2.60)	96 (1.85)	59 (1.13)
<i>C. tropicalis</i>	6,226	4157 (66.77)	1794 (28.81)	682 (10.95)	132 (2.12)	98 (1.57)	58 (0.93)
<i>T. vaginalis</i>	50,190	3922 (7.81)	1144 (2.28)	355 (0.71)	63 (0.13)	42 (0.08)	32 (0.06)

<i>S. liquefaciens</i>	5,531	1299 (23.49)	389 (7.03)	124 (2.24)	2 (0.04)	1 (0.02)	1 (0.02)
<i>S. odoriferae</i>	5,121	1284 (25.07)	385 (7.52)	116 (2.27)	2 (0.04)	1 (0.02)	1 (0.02)
<i>S. ficaria</i>	4,652	1273 (27.36)	387 (8.32)	125 (2.69)	2 (0.04)	1 (0.02)	1 (0.02)
<i>B. cereus</i>	5,240	1487 (28.38)	392 (7.48)	109 (2.08)	0 (0)	0 (0)	0 (0)
<i>B. subtilis</i>	4,260	1429 (33.54)	401 (9.41)	104 (2.44)	0 (0)	0 (0)	0 (0)
<i>B. licheniformis</i>	4,164	1478 (35.49)	401 (9.63)	109 (2.62)	0 (0)	0 (0)	0 (0)
<i>T. marneffei</i>	10,448	4901 (46.91)	2192 (20.98)	895 (8.57)	154 (1.47)	128 (1.23)	68 (0.65)
Nonpathogenic organisms							
<i>T. rubripes</i>	51,078	16470 (32.24)	13161 (25.77)	9442 (18.49)	3843 (7.52)	3686 (7.22)	3063 (6.00)
<i>A. thaliana</i>	39,351	6000 (15.25)	2632 (6.69)	1024 (2.60)	205 (0.52)	155 (0.39)	89 (0.23)
<i>C. elegans</i>	26,714	9551 (35.75)	5242 (19.62)	2227 (8.34)	364 (1.36)	323 (1.21)	165 (0.62)
<i>C. intestinalis</i>	17,309	11562 (66.80)	7672 (44.32)	3834 (22.15)	673 (3.89)	607 (3.51)	383 (2.21)
<i>D. melanogaster</i>	22,049	10125 (45.92)	6523 (29.58)	3302 (14.98)	625 (2.83)	544 (2.47)	332 (1.51)
<i>M. musculus</i>	55,471	19259 (34.72)	17700 (31.91)	15110 (27.24)	15216 (27.43)	14683 (26.47)	13128 (26.67)
<i>O. sativa</i>	48,903	5943 (12.15)	2471 (5.05)	931 (1.90)	196 (0.40)	156 (0.32)	88 (0.18)
<i>R. norvegicus</i>	29,943	19029 (63.55)	17491 (58.41)	14834 (49.54)	14617 (48.82)	14131 (47.19)	12603 (42.09)
<i>S. cerevisiae</i>	6,049	4088 (67.58)	1770 (29.26)	698 (11.54)	135 (2.23)	96 (1.59)	60 (0.99)
<i>S. castellii</i>	5,565	4038 (72.56)	1732 (31.12)	673 (12.09)	128 (2.30)	90 (1.62)	53 (0.95)
<i>C. tyrobutyricum</i>	3,032	1154 (38.06)	297 (9.80)	77 (2.54)	0 (0)	0 (0)	0 (0)
<i>C. acetobutylicum</i>	3,847	1163 (30.23)	309 (8.03)	75 (1.95)	0 (0)	0 (0)	0 (0)
<i>C. chromiireducens</i>	4,771	1282 (26.87)	317 (6.64)	90 (1.89)	1 (0.02)	1 (0.02)	1 (0.02)
<i>N. sicca</i>	3646	951 (26.08)	267 (7.32)	75 (2.06)	1 (0.03)	1 (0.03)	0 (0)
<i>N. elongata</i>	2073	835 (40.28)	266 (12.83)	75 (3.62)	0 (0)	0 (0)	0 (0)
<i>N. bacilliformis</i>	2,966	851 (28.69)	249 (8.40)	70 (2.36)	1 (0.03)	0 (0)	0 (0)

<i>E. invadens</i>	9,857	2967 (30.10)	984 (9.98)	322 (3.27)	23 (0.23)	22 (0.22)	14 (0.14)
<i>S. symbiotica</i>	2,157	771 (35.74)	231 (10.71)	69 (3.20)	2 (0.09)	1 (0.05)	1 (0.05)
<i>B. pseudofirmus</i>	4,310	1330 (30.86)	385 (8.93)	106 (2.46)	0 (0)	0 (0)	0 (0)
<i>P. roqueforti</i>	12,315	5015 (40.72)	2167 (17.60)	868 (7.05)	169 (1.37)	142 (1.15)	69 (0.56)
<i>B. fuckeliana</i>	11,022	4986 (45.24)	2201 (19.97)	894 (8.11)	163 (1.48)	150 (1.36)	75 (0.68)

Low stringency = minimum percent coverage of 30% and minimum percent identity of 10%; High stringency = minimum percent coverage of 70% and minimum percent identity of 70%. () = Percentage of similar proteins to the human proteome calculated from the count of similar hits in relation to the total number of proteins of each species.

**Table S2:** Percentage of similar proteins between mice and different pathogenic organisms

Organism	Total of proteins	Pathogenic potential	Low stringency			High stringency		
			E-value					
			1 <sup>-10</sup>	1 <sup>-50</sup>	1 <sup>-100</sup>	1 <sup>-10</sup>	1 <sup>-50</sup>	1 <sup>-100</sup>
<i>M. musculus</i>	55,471							
<i>F. tularensis</i>	1,528	1.6 × 10 <sup>0</sup>	59.55 (910)	17.08 (261)	4.91 (75)	0.00 (0)	0.00 (0)	0.00 (0)
<i>B. anthracis</i>	5,493	1.2 × 10 <sup>0</sup>	28.02 (1539)	7.37 (405)	2.09 (115)	0.00 (0)	0.00 (0)	0.00 (0)
<i>B. suis</i>	1,091	8.3 × 10 <sup>-1</sup>	38.41 (419)	8.89 (97)	2.11 (23)	0.18 (2)	0.18 (2)	0.09 (1)
<i>T. gondii</i>	8,404	2.1 × 10 <sup>-1</sup>	40.04 (3365)	16.54 (1390)	6.16 (518)	1.50 (126)	1.36 (114)	0.69 (58)
<i>C. immitis</i>	9,712	1.9 × 10 <sup>-1</sup>	50.85 (4939)	22.21 (2157)	9.12 (886)	2.00 (886)	1.54 (194)	0.70 (68)
<i>K. pneumoniae</i>	5,728	1.7 × 10 <sup>-1</sup>	22.64 (1297)	6.72 (385)	2.09 (120)	0.03 (2)	0.03 (2)	0.02 (1)
<i>S. pneumoniae</i>	2,030	1.1 × 10 <sup>-1</sup>	49.51 (1005)	13.99 (284)	2.91 (59)	0.00 (0)	0.00 (0)	0.00 (0)
<i>Y. pestis</i>	3,909	8.5 × 10 <sup>-2</sup>	28.27 (1105)	9.24 (361)	3.04 (119)	0.05 (2)	0.03 (1)	0.03 (1)
<i>C. neoformans</i>	6,743	6.2 × 10 <sup>-2</sup>	70.64 (4763)	30.70 (2070)	12.35 (833)	2.71 (183)	1.93 (130)	1.08 (73)
<i>V. vulnificus</i>	4,990	4.2 × 10 <sup>-2</sup>	28.78 (1436)	7.68 (383)	2.40 (120)	0.02 (1)	0.00 (0)	0.00 (0)
<i>E. coli</i> k12	4,448	3.2 × 10 <sup>-3</sup>	27.92 (1242)	8.36 (372)	2.68 (119)	0.04 (2)	0.04 (2)	0.02 (1)
<i>C. albicans</i>	6,035	4.8 × 10 <sup>-4</sup>	72.41 (4370)	31.17 (1881)	11.53 (696)	2.55 (154)	1.81 (109)	1.03 (62)

<i>A. fumigatus</i>	9,647	3.0 x 10 <sup>-5</sup>	52.24 (5040)	22.69 (2189)	9.43 (910)	1.93 (186)	1.67 (161)	0.67 (65)
<i>S. agalactiae</i>	2,105	5.0 x 10 <sup>-5</sup>	47.03 (990)	11.78 (248)	2.85 (60)	0.00 (0)	0.00 (0)	0.00 (0)
<i>L. monocytogenes</i>	2,844	1.3 x 10 <sup>-5</sup>	42.83 (1218)	10.79 (307)	2.50 (71)	0.00 (0)	0.00 (0)	0.00 (0)
<i>N. asteroides</i>	6,459	3.7 x 10 <sup>-6</sup>	25.17 (1626)	6.38 (412)	1.30 (84)	0.00 (0)	0.00 (0)	0.00 (0)
<i>N. fowleri</i>	13,596	1.1 x 10 <sup>-6</sup>	40.77 (5543)	17.56 (2388)	6.62 (900)	0.75 (102)	0.67 (91)	0.37 (50)
<i>B. cereus</i>	5,240	3.2 x 10 <sup>-7</sup>	22.10 (1158)	7.82 (410)	2.12 (111)	0.00 (0)	0.00 (0)	0.00 (0)
<i>S. saprophyticus</i>	2,404	1.2 x 10 <sup>-7</sup>	47.80 (1149)	12.56 (302)	2.91 (70)	0.00 (0)	0.00 (0)	0.00 (0)
<i>P. aeruginosa</i>	5,564	6.3 x 10 <sup>-8</sup>	25.93 (1443)	7.98 (444)	2.57 (143)	0.04 (2)	0.04 (2)	0.02 (1)
<i>L. pneumophila</i>	2,930	4.7 x 10 <sup>-8</sup>	39.18 (1148)	12.73 (373)	3.89 (114)	0.03 (1)	0.03 (1)	0.03 (1)
<i>S. epidermidis</i>	2,492	5.3 x 10 <sup>-8</sup>	46.47 (1158)	11.88 (296)	2.89 (72)	0.00 (0)	0.00 (0)	0.00 (0)
<i>S. aureus</i>	2,889	3.2 x 10 <sup>-8</sup>	40.74 (1177)	10.25 (296)	2.53 (73)	0.00 (0)	0.00 (0)	0.00 (0)
<i>H. influenzae</i> type B	1,704	1.6 x 10 <sup>-8</sup>	49.35 (841)	16.20 (276)	5.05 (86)	0.06 (1)	0.06 (1)	0.00 (0)

The percentage of similar proteins to the mouse proteome was calculated from the count of similar hits in relation to the total number of proteins of each species. Low stringency = minimum percent coverage of 30% and minimum percent identity of 10%; High stringency = minimum percent coverage of 70% and minimum percent identity of 70%. () = number of proteins with at least one similar mouse protein