

Supporting Information

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Table S1. Protein rejection data showing protein carry-through for Qiagen and SCODA purification methods

<i>E. coli</i> lysate sample	Initial lysate protein concentration ($\mu\text{g}/\text{mL}$)	Final protein concentration ($\mu\text{g}/\text{mL}$)	Protein rejection ratio
Qiagen			
Control	270 \pm 83	3.9 \pm 2.8	69
Spiked	9,300 \pm 480	190 \pm 57	49
SCODA			
Control	1,400 \pm 95	0.3 \pm 0.5	4700
Spiked	13,000 \pm 700	3.8 \pm 5.0	3400

From left to right, first column indicates purification method and spiking with 43.75 mg of BSA; second and third columns indicate protein levels after lysate and then after purification, respectively; final column indicates the protein rejection ratio.

Table S2. Sequence distribution: Complete distribution of best-scoring hits to known DNA sequences

	Sequence Identity Range	0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100
	ORGANISM										
1	<i>Caulobacter crescentus</i> CB15	0	1	6	8	10	24	15	7	0	0
2	<i>Novosphingobium aromaticivorans</i> DSM12444	0	1	3	8	16	10	13	7	1	0
3	<i>Rhodopseudomonas palustris</i> HaA2	0	1	8	12	13	14	7	3	0	0
4	<i>Anaeromyxobacter dehalogenans</i> 2CP-C	0	0	3	5	17	18	8	0	0	0
5	<i>Rhodopirellula baltica</i> SH1	0	4	13	6	8	3	3	0	0	0
6	<i>Sphingopyxis alaskensis</i> RB2256	0	0	5	3	5	11	7	4	0	0
7	<i>Erythrobacter litoralis</i> HTCC2594	0	2	1	3	3	4	10	4	1	0
8	<i>Bradyrhizobium japonicum</i> USDA110	0	1	3	2	6	4	7	1	0	0
9	<i>Frankia alnistr.</i> ACN14A	0	0	1	4	7	9	2	0	0	0
10	<i>Pseudomonas aeruginosa</i> PAO1	0	0	3	3	4	6	3	1	0	2
11	<i>Leifsonia xyli</i> subsp. xylistr. CTCB07	0	0	0	0	5	4	6	5	1	0
12	<i>Mesorhizobium loti</i> MAFF303099	0	0	4	3	4	5	2	3	0	0
13	<i>Burkholderia</i> sp.383	0	0	2	2	5	6	3	0	0	0
14	<i>Agrobacterium tumefaciens</i> str. C58	0	2	1	0	2	2	8	0	2	0
15	<i>Xanthomonas campestris</i> pv. <i>campestris</i> str.80	0	1	2	2	1	6	4	0	0	0
16	<i>Burkholderia cenocepacia</i> AU1054	0	0	2	1	6	2	4	0	0	0
17	<i>Thiobacillus denitrificans</i> ATCC25259	0	0	2	2	3	4	3	0	1	0
18	<i>Rhizobium etli</i> CFN 42	0	0	0	1	3	5	5	0	0	0
19	<i>Burkholderia thailandensis</i> E264	0	1	1	2	6	4	0	0	0	0
20	<i>Nocardia farcinica</i> IFM10152	0	0	0	2	5	3	3	1	0	0
21	<i>Burkholderia pseudomallei</i> strain K96243	0	0	0	6	3	1	3	0	0	0
22	<i>Ralstonia eutropha</i> H16	0	1	1	3	1	3	3	1	0	0
23	<i>Streptomyces avermitilis</i> MA-4680	0	0	1	2	1	4	4	0	0	0
24	<i>Myxococcus xanthus</i> DK1622	0	0	1	3	1	4	2	0	0	0
25	<i>Gloeobacter violaceus</i> PCC7421	0	1	2	3	3	0	1	0	0	0
26	<i>Polaromonas</i> sp. JS666	0	0	0	0	3	3	3	0	1	0
27	<i>Dictyostelium discoideum</i>	2	2	0	1	2	3	0	0	0	0
28	<i>Ralstoniasolana cearum</i> GMI1000	0	1	1	3	1	4	0	0	0	0
29	<i>Burkholderia mallei</i> ATCC23344	0	0	1	3	3	2	1	0	0	0
30	<i>Rhodobacter sphaeroides</i> 2.4.1	0	1	0	3	2	1	2	0	0	0
31	<i>Mycobacterium avium</i> subsp. <i>paratuberculosis</i>	0	0	0	1	5	2	1	0	0	0

32	<i>Rhodoferrax ferrireducens</i> DSM15236	0	0	1	3	2	2	0	0	1	0
33	<i>Chromobacterium violaceum</i> ATCC12472	0	0	1	1	2	0	4	0	0	0
34	<i>Rhodospirillum rubrum</i> ATCC11170	0	0	2	3	1	1	1	0	0	0
35	<i>Bordetella parapertussis</i> strain 12822	0	0	1	2	1	3	1	0	0	0
36	<i>Bordetella bronchiseptica</i> strain RB50	0	0	0	0	1	1	5	0	0	0
37	<i>Azoarcus</i> sp.EbN1	0	0	1	0	2	3	1	0	0	0
38	<i>Mesorhizobium</i> sp.BNC1	0	0	2	0	1	3	0	0	0	0
39	<i>Methylococcus capsulatus</i> str.Bath	0	0	1	2	2	0	1	0	0	0
40	<i>Culex pipiens quinquefasciatus</i>	0	0	0	0	1	2	3	0	0	0
41	<i>Symbiobacterium thermophilum</i> IAM14863	0	0	0	2	1	1	1	0	0	0
42	<i>Bordetella pertussis</i> strain Tohamal	0	0	1	2	1	0	1	0	0	0
43	<i>Burkholderia xenovorans</i> LB400	0	0	0	3	0	1	1	0	0	0
44	<i>Rhodococcus</i> sp.RHA1	0	0	0	2	0	1	2	0	0	0
45	<i>Nitrobacter hamburgensis</i> X14	0	0	0	2	2	0	0	1	0	0
46	<i>Plasmodium falciparum</i> 3D7	0	0	1	1	1	0	2	0	0	0
47	<i>Pseudomonas syringae</i> pv.syringae B728a	0	0	2	2	0	1	0	0	0	0
48	<i>Pseudomonas fluorescens</i> Pf-5	0	0	0	0	3	0	2	0	0	0
49	<i>Mycobacterium</i> sp.MCS	0	0	0	2	0	1	1	0	0	0
50	<i>Lycopersicon sculentum</i>	0	0	1	1	0	1	1	0	0	0
51	<i>Phakopsorapa chyryhizi</i>	0	1	0	0	1	0	2	0	0	0
52	SCO939120 <i>Streptomyces coelicolor</i> A3(2)	0	0	0	1	0	3	0	0	0	0
53	<i>Pseudomonas entomophila</i> str.L48	0	0	0	1	0	1	1	1	0	0
54	<i>Ralstonia eutropha</i> JMP134	0	0	0	0	2	2	0	0	0	0
55	<i>Frankia</i> sp.Ccl3	0	0	0	2	0	1	1	0	0	0
56	<i>Methylobacillus flagellatus</i> KT	0	1	0	0	1	1	0	0	0	0
57	<i>Magnetospirillum magneticum</i> AMB-1	0	0	0	0	2	1	0	0	0	0
58	<i>Nitrobacter winogradskyi</i> Nb-255	0	0	0	2	0	1	0	0	0	0
59	<i>Brucella abortus</i> biovar1 str.9-941	0	0	0	0	1	0	1	1	0	0
60		0	0	1	0	1	0	1	0	0	0
61	<i>Sorex araneus</i>	0	0	0	2	0	1	0	0	0	0
62	<i>Chromohalobacters alexigens</i> DSM3043	0	0	0	1	0	2	0	0	0	0
63	<i>Mycobacterium tuberculosis</i> H37Rv	0	1	0	1	0	1	0	0	0	0
64	<i>Silici bacter</i> sp.TM1040	0	0	2	1	0	0	0	0	0	0
65	<i>Thermobifida fusca</i> YX	0	0	0	0	0	1	1	1	0	0
66	<i>Yersinia pseudotuberculosis</i> IP32953	0	0	0	1	0	1	1	0	0	0

102	<i>Streptomyces rimosus</i> subsp. <i>paromomycinus</i>	0	0	0	1	0	0	0	0	0	0
103	SCO939105 <i>Streptomyces coelicolor</i> A3(2)	0	0	0	0	0	1	0	0	0	0
104	<i>Actinosynnema pretiosum</i> subsp. <i>auranticum</i>	0	0	0	0	0	1	0	0	0	0
105	<i>Silicibacter pomeroyi</i> DSS-3	0	0	1	0	0	0	0	0	0	0
106	SCO939125 <i>Streptomyces coelicolor</i> A3(2)	0	0	0	1	0	0	0	0	0	0
107	SCO939115 <i>Streptomyces coelicolor</i> A3(2)	0	0	0	0	1	0	0	0	0	0
108	SCO939119 <i>Streptomyces coelicolor</i> A3(2)	0	0	0	0	0	1	0	0	0	0
109	<i>Laccaria bicolor</i> clone JGIAHZW-15X	0	0	0	0	0	1	0	0	0	0
110	AF245377 <i>Verrucomicrobium spinosum</i>	0	0	0	0	1	0	0	0	0	0
111	<i>Streptomyces nanchangensis</i> NS3226	0	0	1	0	0	0	0	0	0	0
112	<i>Natronomonas pharaonis</i> DSM2160	0	0	0	0	1	0	0	0	0	0
113	AF263011S1 <i>Streptomyces griseus</i>	0	0	0	0	1	0	0	0	0	0
114	<i>Geobacter metallireducens</i> GS-15	0	0	0	0	1	0	0	0	0	0
115	AF312694 <i>Cladosporium fulvum</i>	0	0	1	0	0	0	0	0	0	0
116	AF325500 <i>Antheraea yamamai</i> transposon	0	0	0	1	0	0	0	0	0	0
117	<i>Streptomyces steffisburgensis</i>	0	0	0	0	1	0	0	0	0	0
118	<i>Bacillus licheniformis</i> DSM13	0	0	0	0	0	1	0	0	0	0
119	<i>S.griseus</i> hrdT gene	0	0	0	0	0	0	1	0	0	0
120	AF019706 <i>Meleagris gallopavo</i> microsatellite	0	1	0	0	0	0	0	0	0	0
121	<i>Corynebacterium jeikeium</i> K411	0	0	0	1	0	0	0	0	0	0
122	CNS01DDN <i>Botrytis cinerea</i> strain T4	0	0	1	0	0	0	0	0	0	0
123	AF037457 <i>Fritillaria agrestis</i>	0	0	0	0	1	0	0	0	0	0
124	<i>Pseudomonas citronellolis</i> atuA gene	0	0	0	0	1	0	0	0	0	0
125	<i>M.tuberculosis</i> recA gene	0	0	1	0	0	0	0	0	0	0
126	<i>Roseobacter denitrificans</i> OCh 114	0	0	0	1	0	0	0	0	0	0
127	SCO939110 <i>Streptomyces coelicolor</i> A3(2)	0	0	0	0	1	0	0	0	0	0
128	<i>Azospirillum brasilense</i> bacA gene	0	0	0	0	0	0	1	0	0	0
129	<i>Chlorobium tepidum</i> TLS	0	1	0	0	0	0	0	0	0	0
130	<i>Synechococcus</i> sp.CC9605	0	0	0	0	1	0	0	0	0	0
131	<i>Nitrospira multiformis</i> ATCC25196	0	1	0	0	0	0	0	0	0	0
132	<i>Shigella flexneri</i> 2a str.301	0	0	0	0	0	0	0	1	0	0
133	SCO939108 <i>Streptomyces coelicolor</i> A3(2)	0	0	0	0	0	1	0	0	0	0
134	<i>Mesoplasma florum</i> L1	0	0	0	0	1	0	0	0	0	0
135	<i>Escherichia coli</i> CFT073	0	0	0	1	0	0	0	0	0	0
136	AF310889 <i>Dictyostelium discoideum</i> racD	1	0	0	0	0	0	0	0	0	0

137	D.discoideum actin15 gene	1	0	0	0	0	0	0	0	0	0
138	Sinorhizobium meliloti	0	0	0	0	1	0	0	0	0	0
139	AF195948 Astyanax mexicanus	0	0	0	1	0	0	0	0	0	0
140	Pseudoalteromonas haloplanktis str.TAC125	0	0	0	1	0	0	0	0	0	0
141	Enterobacter sakazakii	0	0	1	0	0	0	0	0	0	0
142	MPA250887 Mycobacterium paratuberculosis	0	1	0	0	0	0	0	0	0	0
143	Dehalococcoides sp.CBDB1	0	0	0	0	1	0	0	0	0	0
144	LLRBC5CM L.laricina	0	0	0	1	0	0	0	0	0	0
145	Deinococcus geothermalis DSM11300	0	0	1	0	0	0	0	0	0	0
146	CZA382 Amycolatopsisorientalis	0	0	1	0	0	0	0	0	0	0
147	Medicago truncatula	0	0	0	0	1	0	0	0	0	0
148	RLE292764 Rhizobium leguminosarum	0	0	1	0	0	0	0	0	0	0
149	Alcanivorax borkumensis SK2	0	0	1	0	0	0	0	0	0	0
150	PAB296741 Piceaabies ATCmicrosatellite	0	0	1	0	0	0	0	0	0	0
151	Shigella boydii Sb227	0	0	0	0	0	1	0	0	0	0
152	Triticum turgidum cultivar	1	0	0	0	0	0	0	0	0	0
153	Rhodospirillum centenum	0	0	1	0	0	0	0	0	0	0
154	Vibrio cholerae isolate 139-68	0	0	0	1	0	0	0	0	0	0
155	CAR515028 Cicer arietinum	0	0	0	1	0	0	0	0	0	0
156	ASY18523Actinoplanessp.SE50/110	0	0	0	0	0	1	0	0	0	0
157	Escherichia coli KB101	1	0	0	0	0	0	0	0	0	0
158	Synechococcus sp.JA-3-3Ab	0	1	0	0	0	0	0	0	0	0
159	Halobacterium sp.NRC-1	0	0	1	0	0	0	0	0	0	0
160	SME591782 Sinorhizobium meliloti 1021	0	0	0	1	0	0	0	0	0	0
161	Populus trichocarpa clonePop1-103L21	0	0	0	0	0	0	1	0	0	0
162	POL505006 Sorangium cellulosum spiG gene	0	0	0	0	0	1	0	0	0	0
163	Onion yellows phytoplasma	0	0	0	0	0	1	0	0	0	0
164	Erwinia carotovora subsp.atroseptica SCRI10	0	0	0	0	1	0	0	0	0	0
165	Legionella pneumophila subsp.pneumophila	0	0	1	0	0	0	0	0	0	0
166	AF335551 Phaseolus vulgaris	0	0	1	0	0	0	0	0	0	0
167	SCO939113 Streptomycescoelicolor A3(2)	0	0	0	0	0	1	0	0	0	0
168	Escherichia coli O157:H7EDL933	0	0	0	0	0	0	1	0	0	0
169	Carboxydotherrmus hydrogenoformans Z-2901	0	0	0	0	0	0	1	0	0	0
170	Uncultured bacterium gene for 16S rRNA	0	0	0	0	0	0	0	1	0	0
171	Bacteroides fragilis YCH46	0	1	0	0	0	0	0	0	0	0

172	Acinetobacter sp.ADP1	0	0	0	0	1	0	0	0	0	0
173	REU80928 Rhizobium etli strain CFN42	0	0	0	0	1	0	0	0	0	0
174	Shewanella sp.MR-4	0	1	0	0	0	0	0	0	0	0
175	Pseudoalteromonas atlantica T6c	0	0	0	0	1	0	0	0	0	0
176	ACNTRYXA A.caulinodans NtrY/NtrX DNA	0	0	0	0	0	0	1	0	0	0
177	AF156304 Eubalaena glacialis microsatellite	0	1	0	0	0	0	0	0	0	0
178	MVU87256 Mustela vison GTdinucleotide	0	1	0	0	0	0	0	0	0	0
179	Kuenenia stuttgartiensis	0	0	0	1	0	0	0	0	0	0
180	SCO939132 Streptomyces coelicolor A3(2)	0	0	0	0	1	0	0	0	0	0
181	Amycolatopsis mediterranea	0	0	0	0	0	0	1	0	0	0
182	Uncultured bacterium zdt-39a1 clone	0	0	0	0	1	0	0	0	0	0
183	Streptococcus pneumoniae strain 34359	0	0	1	0	0	0	0	0	0	0
184	Nuphar lutea GA dinucleotide repeat	0	0	0	0	1	0	0	0	0	0
185	Gordonia terrae	0	0	0	0	0	0	0	1	0	0
186	SCO939126 Streptomyces coelicolor A3(2)	0	0	0	1	0	0	0	0	0	0
187	Ehrlichia ruminantium strain Welgevonden	0	0	0	1	0	0	0	0	0	0
188	Syntrophus aciditrophicus SB	0	0	0	1	0	0	0	0	0	0
189	Sphingomonas paucimobilis	0	0	1	0	0	0	0	0	0	0
190	Boechera divaricarpa isolateSLW-348-443-D0	0	1	0	0	0	0	0	0	0	0
191	SME591785 Sinorhizobium meliloti 1021	0	0	0	0	0	1	0	0	0	0
192	Nitrosococcus oceani ATCC19707	0	1	0	0	0	0	0	0	0	0
193	Jannaschia sp.CCS1	0	0	1	0	0	0	0	0	0	0
194	Pseudendoclonium akinetum	0	0	0	0	0	1	0	0	0	0
195	AF247178 Picea glauca needle chlorophylla/b-	0	0	0	0	0	0	1	0	0	0
196	PASPPCAT Pasteurella piscicida	0	0	0	0	1	0	0	0	0	0
197	Pig DNA sequence from clone CH242-112C22on	0	0	0	1	0	0	0	0	0	0
198	AHU56832 Aeromonas hydrophila FK506	0	0	1	0	0	0	0	0	0	0
199	Microbacterium arborescens strain SE14	0	0	0	0	0	1	0	0	0	0
200	SCO939116 Streptomyces coelicolor A3(2)	0	0	0	0	0	0	1	0	0	0
201	Streptomyces fradiae strain NRRL18158	0	0	0	0	0	1	0	0	0	0
202	AF061928 Plasposon pTnMod-Cm'OTc	0	0	0	1	0	0	0	0	0	0
203	Mycobacterium mucogenicum strain ATCC49651R	0	0	0	0	1	0	0	0	0	0
204	PALHCB12 P.abies	0	0	0	0	1	0	0	0	0	0
205	Pelodictyon luteolum DSM273	0	1	0	0	0	0	0	0	0	0
206	Corynebacterium glutamicum ATCC13032	0	0	0	1	0	0	0	0	0	0

207	AF010496 <i>Rhodobacter capsulatus</i> strain SB100	0	0	0	1	0	0	0	0	0	0
208	<i>Medicago truncatula</i>	0	0	0	1	0	0	0	0	0	0
209	SCO939121 <i>Streptomyces coelicolor</i> A3(2)	0	0	0	0	0	0	1	0	0	0