

Supplemental data for

Cell Penetrating Peptides and Cationic Antibacterial Peptides: two sides of the same coin.

This material includes:

1 Supplemental table

SUPPLEMENTAL TABLE

Table S1. Endocytosis-related genes

Index	ORF	Phenotype	Relative AUC
1	YAL010C	endocytosis: decreased	0.20
2	YAL013W	endocytosis: decreased	0.35
3	YAL047C	endocytosis: decreased	0.12
4	YAL053W	endocytosis: decreased	0.35
5	YAL055W	endocytosis: decreased	0.28
6	YAL068C	endocytosis: decreased	(0.60)
7	YBL006C	endocytosis: decreased	0.20
8	YBL007C	endocytosis: decreased	(0.30)
9	YBL016W	endocytosis: decreased	0.11
10	YBL027W	endocytosis: decreased	0.21
11	YBL047C	endocytosis: decreased	0.21
12	YBL058W	endocytosis: decreased	0.14
13	YBL082C	endocytosis: decreased	0.16
14	YBL083C	endocytosis: decreased	0.16
15	YBL101C	endocytosis: decreased	(0.39)
16	YBR019C	endocytosis: decreased	0.66
17	YBR059C	endocytosis: decreased	(0.29)
18	YBR150C	endocytosis: decreased	0.27
19	YBR229C	endocytosis: decreased	0.22
20	YBR248C	endocytosis: decreased	0.22
21	YBR255W	endocytosis: decreased	0.37
22	YBR266C	endocytosis: decreased	0.42

23	YBR289W	endocytosis: decreased	(0.52)
24	YCL005W	endocytosis: decreased	0.23
25	YCL008C	endocytosis: decreased	0.37
26	YCL046W	endocytosis: decreased	0.20
27	YCR002C	endocytosis: decreased	0.17
28	YCR009C	endocytosis: decreased	(0.30)
29	YCR017C	endocytosis: decreased	0.37
30	YCR028C	endocytosis: decreased	(0.31)
31	YDL096C	endocytosis: decreased	(0.68)
32	YDL146W	endocytosis: decreased	(0.31)
33	YDL161W	endocytosis: decreased	(0.37)
34	YDL176W	endocytosis: decreased	0.21
35	YDL194W	endocytosis: decreased	0.11
36	YDL231C	endocytosis: decreased	(0.37)
37	YDR006C	endocytosis: decreased	0.41
38	YDR017C	endocytosis: abnormal	0.33
39	YDR050C	endocytosis: decreased	0.17
40	YDR072C	endocytosis: decreased	(0.72)
41	YDR129C	endocytosis: decreased	(0.29)
42	YDR173C	endocytosis: abnormal	0.19
43	YDR207C	endocytosis: decreased	0.11
44	YDR221W	endocytosis: decreased	0.15
45	YDR225W	endocytosis: decreased	0.22
46	YDR226W	endocytosis: decreased	(0.36)
47	YDR233C	endocytosis: decreased	0.29
48	YDR234W	endocytosis: decreased	0.22
49	YDR276C	endocytosis: decreased	0.69,
50	YDR335W	endocytosis: decreased	0.13

51	YDR346C	endocytosis: decreased	0.18
52	YDR364C	endocytosis: decreased	0.20
53	YDR368W	endocytosis: decreased	0.19
54	YDR388W	endocytosis: decreased	(0.44)
55	YDR414C	endocytosis: decreased	0.23
56	YEL013W	endocytosis: decreased	(0.38)
57	YEL031W	endocytosis: decreased	0.22
58	YEL045C	endocytosis: decreased	(0.38)
59	YEL060C	endocytosis: decreased	0.19
60	YEL063C	endocytosis: decreased	0.41
61	YEL067C	endocytosis: decreased	(0.50)
62	YER056C-A	endocytosis: decreased	0.27
63	YER069W	endocytosis: decreased	0.33
64	YER074W	endocytosis: decreased	(0.47)
65	YFL025C	endocytosis: decreased	0.12
66	YFL031W	endocytosis: decreased	(0.51)
67	YFL034W	endocytosis: decreased	0.45
68	YFR001W	endocytosis: decreased	0.11
69	YFR024C-A	endocytosis: decreased	0.19
70	YFR031C-A	endocytosis: decreased	(0.65)
71	YGL012W	endocytosis: decreased	0.20
72	YGL014W	endocytosis: decreased	0.14
73	YGL016W	endocytosis: decreased	0.22
74	YGL027C	endocytosis: decreased	(0.72)
75	YGL045W	endocytosis: decreased	(0.29)
76	YGL058W	endocytosis: decreased	(0.52)
77	YGL066W	endocytosis: decreased	0.15
78	YGL072C	endocytosis: decreased	0.12

79	YGL076C	endocytosis: decreased	0.18
80	YGL084C	endocytosis: decreased	0.30
81	YGL198W	endocytosis: decreased	0.31
82	YGL200C	endocytosis: decreased	0.21
83	YGL219C	endocytosis: decreased	(0.42)
84	YGL256W	endocytosis: decreased	0.23
85	YGR036C	endocytosis: decreased	0.16
86	YGR056W	endocytosis: decreased	0.47
87	YGR058W	endocytosis: decreased	(0.58)
88	YGR061C	endocytosis: decreased	(0.50)
89	YGR078C	endocytosis: decreased	0.59
90	YGR080W	endocytosis: decreased	(0.57)
91	YGR086C	endocytosis: decreased rate	(0.25)
92	YGR100W	endocytosis: decreased	(0.75)
93	YGR122W	endocytosis: decreased	(0.72)
94	YGR126W	endocytosis: decreased	0.17
95	YGR138C	endocytosis: decreased	0.19
96	YGR143W	endocytosis: decreased	(0.54)
97	YGR157W	endocytosis: decreased	(0.63)
98	YGR160W	endocytosis: decreased	0.37
99	YGR206W	endocytosis: decreased	0.22
100	YGR240C	endocytosis: decreased	0.32
101	YGR241C	endocytosis: decreased	(0.34)
102	YGR242W	endocytosis: decreased	0.22
103	YGR256W	endocytosis: decreased	0.13
104	YGR259C	endocytosis: decreased	0.24
105	YHL019C	endocytosis: decreased	0.40
106	YHL027W	endocytosis: decreased	0.27

107	YHR030C	endocytosis: decreased	0.44
108	YHR079C	endocytosis: decreased	0.20
109	YHR081W	endocytosis: decreased	0.33
110	YHR082C	endocytosis: decreased	(0.75)
111	YHR092C	endocytosis: decreased	0.23
112	YHR114W	endocytosis: decreased	(0.40)
113	YHR161C	endocytosis: decreased	(1.14)*
114	YIL020C	endocytosis: decreased	0.50
115	YIL027C	endocytosis: decreased	0.15
116	YIL034C	endocytosis: decreased	0.13
117	YIL041W	endocytosis: decreased	(0.53)
118	YIL049W	endocytosis: decreased	0.24
119	YIL064W	endocytosis: decreased	0.16
120	YIL076W	endocytosis: decreased	0.21
121	YIL084C	endocytosis: decreased	0.30
122	YIL090W	endocytosis: decreased	(0.69)
123	YIL093C	endocytosis: decreased	0.23
124	YIL116W	endocytosis: decreased	0.33
125	YIL128W	endocytosis: decreased	0.12
126	YIL130W	endocytosis: decreased	0.17
127	YIL154C	endocytosis: decreased	0.10
128	YIL163C	endocytosis: decreased	0.19
129	YIR003W	endocytosis: decreased	(0.49)
130	YIR005W	endocytosis: decreased	0.24
131	YIR009W	endocytosis: decreased	0.36
132	YIR021W	endocytosis: decreased	(0.56)
133	YIR026C	endocytosis: decreased	0.29
134	YIR034C	endocytosis: decreased	(0.71)

135	YJL020C	endocytosis: decreased	0.14
136	YJL153C	endocytosis: decreased	0.16
137	YJL175W	endocytosis: decreased	0.18
138	YJL176C	endocytosis: decreased	0.13
139	YJL183W	endocytosis: decreased	0.17
140	YJL204C	endocytosis: abnormal	(0.29)
141	YJL215C	endocytosis: decreased	0.20
142	YJR010C-A	endocytosis: decreased	0.19
143	YJR033C	endocytosis: decreased	0.42
144	YJR055W	endocytosis: decreased	0.28
145	YJR106W	endocytosis: decreased	0.38
146	YJR116W	endocytosis: decreased	(0.71)
147	YJR118C	endocytosis: decreased	0.44
148	YJR121W	endocytosis: decreased	0.18
149	YKL001C	endocytosis: decreased	0.28
150	YKL002W	endocytosis: decreased	(0.56)
151	YKL007W	endocytosis: decreased	0.11
152	YKL032C	endocytosis: decreased	0.17
153	YKL041W	endocytosis: decreased	0.39
154	YKL063C	endocytosis: decreased	0.39
155	YKL065C	endocytosis: decreased	(0.54)
156	YKL071W	endocytosis: decreased	0.42
157	YKL072W	endocytosis: decreased	0.27
158	YKL073W	endocytosis: decreased	0.38
159	YKL074C	endocytosis: decreased	(0.51)
160	YKL081W	endocytosis: decreased	1.1*
161	YKL119C	endocytosis: decreased	2.3*
162	YKL126W	endocytosis: absent	(0.56)

163	YKL136W	endocytosis: decreased	(0.51)
164	YKL139W	endocytosis: decreased	(0.43)
165	YKL160W	endocytosis: decreased	(0.3)
166	YKL204W	endocytosis: decreased	(0.25)
167	YKL212W	endocytosis: delayed	(0.23)
168	YKR001C	endocytosis: decreased	(0.27)
169	YKR035C	endocytosis: decreased	(0.31)
170	YKR035W-A	endocytosis: decreased	(0.51)
171	YLL014W	endocytosis: decreased	(0.37)
172	YLL033W	endocytosis: decreased	0.64
173	YLL038C	endocytosis: decreased	(0.38)
174	YLL039C	endocytosis: decreased	(0.59)
175	YLR025W	endocytosis: decreased	(0.55)
176	YLR056W	endocytosis: decreased	(0.31)
177	YLR069C	endocytosis: decreased	0.18
178	YLR087C	endocytosis: decreased	(0.31)
179	YLR113W	endocytosis: decreased	(0.40)
180	YLR120C	endocytosis: decreased	0.43
181	YLR136C	endocytosis: decreased	0.71
182	YLR139C	endocytosis: decreased	0.34
183	YLR149C	endocytosis: decreased	(0.52)
184	YLR150W	endocytosis: decreased	0.29
185	YLR169W	endocytosis: decreased	0.67
186	YLR170C	endocytosis: decreased	0.19
187	YLR171W	endocytosis: decreased	(0.34)
188	YLR200W	endocytosis: decreased	0.17
189	YLR262C-A	endocytosis: decreased	0.14
190	YLR320W	endocytosis: decreased	0.18

191	YLR342W	endocytosis: decreased	(0.32)
192	YLR422W	endocytosis: decreased	0.18
193	YLR425W	endocytosis: decreased	0.14
194	YLR428C	endocytosis: decreased	0.24
195	YLR429W	endocytosis: decreased	0.26
196	YML008C	endocytosis: decreased	0.78
197	YML012W	endocytosis: decreased	0.25
198	YML014W	endocytosis: decreased	0.17
199	YML017W	endocytosis: decreased	0.18
200	YML019W	endocytosis: decreased	0.19
201	YML048W	endocytosis: decreased	0.25
202	YMR023C	endocytosis: decreased	0.17
203	YMR024W	endocytosis: decreased	(0.35)
204	YMR031W-A	endocytosis: decreased	0.23
205	YMR032W	endocytosis: decreased	0.64
206	YMR063W	endocytosis: decreased	(0.50)
207	YMR074C	endocytosis: decreased	(0.61)
208	YMR091C	endocytosis: decreased	0.78
209	YMR092C	endocytosis: decreased	(0.56)
210	YMR198W	endocytosis: decreased	0.17
211	YMR272C	endocytosis: decreased	(0.67)
212	YMR289W	endocytosis: decreased	(0.58)
213	YMR307W	endocytosis: decreased	0.18
214	YNL004W	endocytosis: decreased	0.55
215	YNL016W	endocytosis: decreased	(0.29)
216	YNL032W	endocytosis: decreased	(0.29)
217	YNL050C	endocytosis: decreased	0.10
218	YNL069C	endocytosis: decreased	0.15

219	YNL079C	endocytosis: decreased	0.23
220	YNL097C	endocytosis: decreased	0.15
221	YNL105W	endocytosis: decreased	(0.62)
222	YNL106C	endocytosis: decreased	(0.56)
223	YNL123W	endocytosis: decreased	0.16
224	YNL196C	endocytosis: decreased	(0.37)
225	YNL197C	endocytosis: decreased	0.12
226	YNL198C	endocytosis: decreased	0.54
227	YNL199C	endocytosis: decreased	0.14
228	YNL215W	endocytosis: decreased	(0.43)
229	YNL219C	endocytosis: decreased	0.10
230	YNL238W	endocytosis: decreased	0.18
231	YNL248C	endocytosis: decreased	(0.60)
232	YNL264C	endocytosis: decreased	0.13
233	YNL266W	endocytosis: decreased	(0.53)
234	YNL269W	endocytosis: decreased	0.12
235	YNL280C	endocytosis: decreased	0.32
236	YNL294C	endocytosis: decreased	0.16
237	YNL330C	endocytosis: premature	0.21
238	YNR005C	endocytosis: decreased	0.20
239	YNR006W	endocytosis: decreased	0.19
240	YNR010W	endocytosis: decreased	0.21
241	YNR021W	endocytosis: decreased	0.20
242	YNR030W	endocytosis: decreased	0.11
243	YNR031C	endocytosis: decreased	0.24
244	YNR050C	endocytosis: decreased	0.08
245	YOL004W	endocytosis: decreased	0.19
246	YOL006C	endocytosis: decreased	(0.28)

247	YOL007C	endocytosis: decreased	0.21
248	YOL009C	endocytosis: decreased	0.34
249	YOL018C	endocytosis: decreased	(0.30)
250	YOL036W	endocytosis: decreased	0.12
251	YOL065C	endocytosis: increased	0.13
252	YOL072W	endocytosis: decreased	0.11
253	YOR008C	endocytosis: decreased	(0.71)
254	YOR016C	endocytosis: decreased	0.76
255	YOR026W	endocytosis: decreased	0.32
256	YOR030W	endocytosis: decreased	0.20
257	YOR035C	endocytosis: decreased	(0.45)
258	YOR036W	endocytosis: decreased	(0.46)
259	YOR043W	endocytosis: decreased	(0.62)
260	YOR067C	endocytosis: decreased	(0.75)
261	YOR089C	endocytosis: abnormal	(0.26)
262	YOR126C	endocytosis: decreased	(0.78)
263	YOR127W	endocytosis: decreased	(0.59)
264	YOR141C	endocytosis: decreased	(1.2)*
265	YOR189W	endocytosis: decreased	(0.50)
266	YOR211C	endocytosis: decreased	(0.49)
267	YOR255W	endocytosis: decreased	(0.93)
268	YOR322C	endocytosis: decreased	(0.47)
269	YPL002C	endocytosis: decreased	0.10
270	YPL042C	endocytosis: decreased	(0.25)
271	YPL049C	endocytosis: decreased	0.11
272	YPL057C	endocytosis: decreased	0.29
273	YPL066W	endocytosis: decreased	(0.55)
274	YPL079W	endocytosis: decreased	0.31

275	YPL100W	endocytosis: decreased	0.29
276	YPL101W	endocytosis: decreased	(0.42)
277	YPL118W	endocytosis: decreased	0.22
278	YPL125W	endocytosis: decreased	0.84
279	YPL129W	endocytosis: decreased	0.33
280	YPL145C	endocytosis: decreased	(0.29)
281	YPL158C	endocytosis: decreased	0.29
282	YPL178W	endocytosis: decreased	0.16
283	YPL179W	endocytosis: decreased	0.27
284	YPL193W	endocytosis: decreased	0.29
285	YPL212C	endocytosis: decreased	0.94
286	YPL226W	endocytosis: decreased	(0.31)
287	YPL227C	endocytosis: decreased	0.17
288	YPL239W	endocytosis: decreased	0.17
289	YPL256C	endocytosis: decreased	0.11
290	YPR164W	endocytosis: decreased	(0.50)
291	YPR173C	endocytosis: decreased	0.24

Listed in alphabetical order, *S. cerevisiae* strains (BY4741 MAT a his3 Δ 1 leu2 Δ 0 met15 Δ 0 ura3 Δ 0) carrying a null mutant gene with an annotated phenotype in SGD affecting endocytosis were evaluated in their ability to protect against the killing induced by IP-1. The relative area under the growth curve (Relative AUC column) indicates the protecting effect for each null mutants strain tested. The ratio was derived by calculating the area under the curve of the null mutant strain in the presence of IP-1 divided by the area under the growth curve of the null mutant in the absence of IP-1. Every gene with a relative AUC equal or bigger than 1, was considered to fully protect against the killing by IP-1 and are marked with a *. The results include the AUC for each of the 291 listed mutant strains; every gene that either had a AUC \geq 1, was annotated to be critical for endocytosis, or had been randomly selected to perform two additional evaluations and their corresponding average AUC values are shown in parenthesis. The genes annotated to function directly on endocytosis (according to GO term clustering) are shadowed.