

Table S2. Normalized activities of AP and BG Wzy truncation fusions to PhoALacZ α

Residue ^a	Avg AP ^b	Avg BG ^c	%AP ^d	%BG ^e	NAR ^f (%AP÷%BG)	Colony Colour ^g	Localization ^h
<i>Random</i>							
N29	22.1	1.6	44.7	24.3	1.84	Purple	TM
I33	33.4	-2.5	67.8	-37.3	>100	Blue	P
S42	36.2	-1.3	73.4	-19.4	>100	Blue	P
C66	-1.0	3.0	-2.1	44.6	<0.01	Red	C
V91	39.2	-2.0	79.6	-30.6	>100	Blue	P
S99	48.1	-1.8	97.6	-26.7	>100	Blue	P
W105	28.6	-0.2	58.0	-2.8	>100	Blue	P
L130	-1.0	3.8	-2.1	57.9	<0.01	Red	C
F165	26.3	0.3	53.3	4.7	11.34	Blue	P
A177	49.3	-0.7	100.0	-10.9	>100	Blue	P
A188	41.6	-1.9	84.5	-28.7	>100	Blue	P
S194	29.8	-1.1	60.4	-16.5	>100	Blue	P
R211	4.9	1.4	9.9	21.2	0.46	Purple	TM
L219	-5.3	5.0	-10.7	76.0	<0.01	Red	C
F231	18.4	1.6	37.2	23.8	1.56	Purple	TM
V238	41.3	-0.2	83.8	-3.1	>100	Blue	P
V256	-5.9	3.5	-11.9	52.1	<0.01	Red	C
F279	34.6	-2.8	70.2	-42.1	>100	Blue	P
N285	24.1	-0.1	48.9	-0.8	>100	Blue	P
D286	28.1	0.2	57.0	3.0	19.00	Blue	P
P296	34.7	-2.7	70.4	-40.9	>100	Blue	P
L300	34.8	-8.0	70.5	-121.4	>100	Blue	P
F306	10.6	-3.5	21.4	-53.1	>100	Purple	P
E339	-2.5	3.5	-5.0	52.9	<0.01	Red	C
F341	-1.1	2.4	-2.2	35.8	<0.01	Red	C
L378	-2.8	2.5	-5.7	37.8	<0.01	Red	C
L382	-3.7	2.7	-7.5	40.2	<0.01	Red	C
G387	-3.9	3.5	-7.9	53.2	<0.01	Red	C
A395	-3.0	6.6	-6.1	100.0	<0.01	Red	C
T399	11.8	1.3	23.8	19.1	1.25	Purple	TM
G415	10.5	1.3	21.3	19.0	1.12	Purple	TM
<i>Targeted</i>							
R135	0.0	120.1	0.0	100.0	<0.01	Red	C
S147	-2.7	50.8	-2.9	42.3	<0.01	Red	C
G311	78.7	4.0	83.5	3.3	25.37	Purple	P
R316	88.1	5.5	93.5	4.6	20.33	Purple	P
G321	44.7	94.7	47.5	78.9	0.60	Purple	TM
L323	8.1	19.2	8.6	16.0	0.54	Purple	TM
R335	25.3	21.5	26.9	17.9	1.50	Purple	TM
D345	21.2	17.4	22.5	14.5	1.55	Purple	TM
Q359	23.1	-1.9	24.6	-1.6	>100	Purple	P
V365	3.6	3.8	3.9	3.2	1.22	Purple	TM
M419	94.2	1.3	100.0	1.0	100	Purple	P
L438	1.0	21.7	0.0	100.0	<0.01	Red	C

As purpose-built truncations had higher absolute activities than random truncations, the two sets were normalized independently against the maximum activity within the respective subset of residues.

^a Position of the terminal amino acid of Wzy followed by reporter.

^b and ^c AP and BG activities of the fusions in Miller units, measured as described in Materials and Methods; average of four independent experiments.

^d and ^e Percentage of AP and BG activities of the fusions in relation to the maximum measured activity within the set, calculated separately for targeted and random truncations.

^f Normalized %AP ÷ %BG activity ratio (NAR), rounded to two decimal places.

^g Colony colour of expressed clone on dual-indicator plate.

^h Localization of terminal amino acid on the topology map: periplasm (P), cytoplasm (C), transmembrane (TM).