

Supplemental Table 1. Construction of SLAC mutants

Residue & mutation	Predicted function of mutated residues	Primers
H231A	type 1 Cu binding	CACGGGGAGTACTACGCCACCTTCCACATGCAC, GTGCATGTGGAAGGTGGCGTAGTACTCCCCGTG
C288A	type 1 Cu binding	GCGTGGATGTACCACGCCACGTCCAGAGCCAC, GTGGCTCTGGACGTGGGCGTGGTACATCCACGC
H293A	type 1 Cu binding	CTGCCACGTCCAGAGCGCCTCCGACATGGGCATG, CATGCCCATGTTCGGAGGCGCTCTGGACGTGGCAG
M298A	fine-tuning type 1 Cu redox potential	CACTCCGACATGGGCGCGGTGGGGCTGTTCTG, CAGGAACAGCCCCACCGCGCCCATGTTCGGAGTG
H104A	type 3 Cu binding	GCCAGCCTGCACGTGGCCGGCCTGGACTACGAG, CTCGTAGTCCAGGCCGGCCACGTGCAGGCTGGC
H156A	type 3 Cu binding	GGCTACTGGCACTACGCCGACCACGTCTCGCC, GGCGACGACGTGGTTCGGCGTAGTGCCAGTAGCC
H289A	type 3 Cu binding	GTGGATGTACCACTGCGCCGTCCAGAGCCACTCC, GGAGTGGCTCTGGACGGCGCAGTGGTACATCCAC
H158A	type 3 Cu binding	CTGGCACTACCACGACGCCGTCTCGGCACCGAAC, GTTCCGGTCCGACGACGGCGTCTGGTGTAGTGCCAG
H287A	type 3 Cu binding	GGGGCGTGGATGTACGCCTGCCACGTCCAGAGC, GCTCTGGACGTGGCAGGCGTACATCCACGCCCC
H236A	type 3 Cu binding	CACACCTTCCACATGGCCGGTCACCGCTGGGCG, CGCCCAGCGGTGACCGGCCATGTGGAAGGTGTG
H102A	type 2 Cu binding	CGTGCGGGCCAGCCTGGCCGTGCACGGCCTGGAC, GTCCAGGCCGTGCACGGCCAGGCTGGCCCCGACG
H234A	type 2 Cu binding	GTACTIONCACACCTTCGCCATGCACGGTCACCG, GCGGTGACCGTGCATGGCGAAGGTGTGGTAGTAC
M198A	Substrate binding	GATCGTCTTCAACGACGCGACCATCAACAACCG, GCGGTTGTTGATGGTTCGCGTCGTTGAAGACGATC
E228A	Substrate binding	CATGATCACGCACGGGGCGTACTACCACACCTTC, GAAGGTGTGGTAGTACGCCCCGTGCGTGATCATG
Y229A	Substrate binding	GATCACGCACGGGGAGGCCTACCACACCTTCCAC, GTGGAAGGTGTGGTAGGCCTCCCCGTGCGTGATC
Y230A	Substrate binding	CACGCACGGGGAGTACGCCACACCTTCCACATG, CATGTGGAAGGTGTGGGCGTACTCCCCGTGCGTG
S292A	Substrate binding	CACGTCCAGAGCCACGCCGACATGGGCATGGTG, CACCATGCCCATGTTCGGCGTGGCTCTGGACGTG