

Table S1: Arg83 mutants and their effect on the stability of ChrR structure

<b>Mutation</b>	<b>Mutation Energy</b>	<b>Effect of Mutation</b>
ARG83>TRP	-1.14	Stabilizing
ARG83>CYS	-0.46	Neutral
ARG83>GLN	-0.33	Neutral
ARG83>ARGN	-0.28	Neutral
ARG83>LYSN	-0.15	Neutral
ARG83>LEU	-0.08	Neutral
ARG83>TYR	-0.02	Neutral
ARG83>ARG	-0.01	Neutral
ARG83>PRO	0	Neutral
ARG83>ILE	0.1	Neutral
ARG83>SER	0.1	Neutral
ARG83>THR	0.11	Neutral
ARG83>VAL	0.17	Neutral
ARG83>PHE	0.22	Neutral
ARG83>ASPH	0.25	Neutral
ARG83>MET	0.27	Neutral
ARG83>LYS	0.37	Neutral
ARG83>GLUH	0.42	Neutral
ARG83>ASN	0.48	Neutral
ARG83>ALA	0.63	Destabilizing
ARG83>HIS	0.64	Destabilizing
ARG83>GLY	0.71	Destabilizing
ARG83>GLU	0.76	Destabilizing
ARG83>ASP	0.85	Destabilizing
ARG83>HSC	1.06	Destabilizing

Table S2: Gly124 mutants and their effect on stability of ChrR structure

Mutation	Mutation Energy	Effect of Mutation
GLY124>ILE	-2.77	Stabilizing
GLY124>TRP	-2.77	Stabilizing
GLY124>PHE	-2.4	Stabilizing
GLY124>VAL	-2.4	Stabilizing
GLY124>LEU	-2.16	Stabilizing
GLY124>TYR	-2.13	Stabilizing
GLY124>GLN	-1.94	Stabilizing
GLY124>ASN	-1.93	Stabilizing
GLY124>MET	-1.81	Stabilizing
GLY124>CYS	-1.43	Stabilizing
GLY124>GLU	-1.43	Stabilizing
GLY124>HIS	-1.42	Stabilizing
GLY124>ASP	-1.36	Stabilizing
GLY124>THR	-1.11	Stabilizing
GLY124>ALA	-1.1	Stabilizing
GLY124>SER	-0.77	Stabilizing
GLY124>LYS	-0.12	Neutral
GLY124>ARG	0.03	Neutral
GLY124>GLY	0.05	Neutral
GLY124>PRO	1.11	Destabilizing

Table S3: His127 mutants and their effect on stability of ChrR structure

<b>Mutation</b>	<b>Mutation Energy</b>	<b>Effect of Mutation</b>
HIS127>TRP	-1.62	Stabilizing
HIS127>PHE	-1.54	Stabilizing
HIS127>ILE	-1.47	Stabilizing
HIS127>LEU	-1.46	Stabilizing
HIS127>CYS	-1.35	Stabilizing
HIS127>VAL	-1.33	Stabilizing
HIS127>ARG	-1.32	Stabilizing
HIS127>ARGN	-1.3	Stabilizing
HIS127>LYSN	-1.27	Stabilizing
HIS127>GLN	-1.26	Stabilizing
HIS127>GLUH	-1.17	Stabilizing
HIS127>GLU	-1.16	Stabilizing
HIS127>THR	-1.01	Stabilizing
HIS127>TYR	-0.98	Stabilizing
HIS127>ASN	-0.78	Stabilizing
HIS127>ASPH	-0.66	Stabilizing
HIS127>LYS	-0.52	Stabilizing
HIS127>SER	-0.48	Neutral
HIS127>MET	-0.47	Neutral
HIS127>HIS	-0.38	Neutral
HIS127>ALA	-0.31	Neutral
HIS127>ASP	-0.11	Neutral
HIS127>HSC	0.18	Neutral
HIS127>GLY	0.75	Destabilizing
HIS127>PRO	28.56	Destabilizing

Table S4: Glu145 mutants and their effect on stability of ChrR structure.

<b>Mutation</b>	<b>Mutation Energy (kcal/mol)</b>	<b>Effect of Mutation</b>
GLU145>CYS	-0.35	Neutral
GLU145>ILE	-0.3	Neutral
GLU145>GLU	0.02	Neutral
GLU145>VAL	0.03	Neutral
GLU145>GLUH	0.07	Neutral
GLU145>ASPH	1.3	Destabilizing
GLU145>GLY	1.42	Destabilizing
GLU145>ASN	1.42	Destabilizing
GLU145>LYS	1.58	Destabilizing
GLU145>HSC	2.47	Destabilizing