

Table S1. Comparison predicted $\Delta\Delta G$ (kcal/mol) mutants of 3ZU7 from different web- based algorithms.

$\Delta\Delta G$ Prediction kcal /mol)	MAESTRO	Dynamut	mCSM	SDM	DUET
A443D	-0.325	-0.154	-0.551	0.100	-0.255
S380L	-0.285	2.495	-0.463	1.430	0.114
A443N	-0.232	0.169	-0.215	0.090	-0.048
N422A	-0.517	0.005	-0.501	1.800	0.301
N422T	-0.608	0.400	-0.078	-0.650	0.185
N422I	-0.484	-0.151	-0.020	0.970	0.557
S380I	-0.209	2.300	-0.463	1.700	0.176
D421I	-0.240	1.173	0.369	0.480	0.804
I389D	-0.827	-0.036	0.088	-0.790	0.395
I389W	-0.672	-0.117	-0.592	0.150	-0.468
I389T	-0.522	-0.106	-0.541	-1.270	-0.383
D454W	-0.317	0.136	-0.102	-0.090	-0.230
D421W	-0.428	1.879	0.198	-0.840	-0.151

Note: Mutation prediction from servers MAESTRO, Dynamut, mCSM (mutation Cutoff Scanning Matrix), SDM (Site Directed Mutator) and DUET. *For MAESTRO, $\Delta\Delta G < 0$ indicates stabilizing mutations while for Dynamut, SDM, mCSM and DUET servers, $\Delta\Delta G > 0$ indicates stabilizing mutations.