

System	Mean dG* (kcal/mol)	Mean dG0 (kcal/mol)
WT Human Sec	16.37 $\pm$ 0.95 kcal/mol	-60.85 $\pm$ 1.84 kcal/mol
WT Mouse Cys	20.72 $\pm$ 1.07 kcal/mol	-55.43 $\pm$ 1.77 kcal/mol
Mouse Sec	15.75 $\pm$ 0.71 kcal/mol	-64.42 $\pm$ 1.86 kcal/mol
Mouse Cys - S47A	17.38 $\pm$ 0.59 kcal/mol	-56.04 $\pm$ 2.59 kcal/mol
Human Sec A47S	18.95 $\pm$ 1.22 kcal/mol	-58.86 $\pm$ 1.90 kcal/mol
Mouse Cys T52A	20.08 $\pm$ 1.35 kcal/mol	-48.75 $\pm$ 2.83 kcal/mol
Human Sec A52T	19.49 $\pm$ 0.61 kcal/mol	-56.84 $\pm$ 1.80 kcal/mol
Mouse Cys F48Y	20.25 $\pm$ 0.47 kcal/mol	-52.71 $\pm$ 1.74 kcal/mol
Human Sec Y48F	23.69 $\pm$ 1.61 kcal/mol	-51.15 $\pm$ 1.82 kcal/mol
Human Sec Q54T	19.18 $\pm$ 1.04 kcal/mol	-58.15 $\pm$ 1.82 kcal/mol
Human Sec C99R	17.52 $\pm$ 0.69 kcal/mol	-50.28 $\pm$ 2.55 kcal/mol
Human Cys	19.34 $\pm$ 1.05 kcal/mol	-49.99 $\pm$ 2.73 kcal/mol

Table 1: Free energy changes in wild type and mutants at 10 Å distance with errors