

System	Mean dG* (kcal/mol)	Mean dG0 (kcal/mol)
Mouse Cys		
Mouse Sec		
Human Cys		
WT-Mouse Cys	16.45 \pm 0.56 kcal/mol	-59.70 \pm 1.54 kcal/mol
WT-Human Sec	13.69 \pm 0.95 kcal/mol	-64.82 \pm 1.69 kcal/mol
S47A,F48Y,T54Q,R99C	19.34 \pm 0.58 kcal/mol	-47.63 \pm 2.85 kcal/mol
F48Y,T52A,T54Q,R99C	19.83 \pm 0.72 kcal/mol	-39.63 \pm 2.80 kcal/mol
S47A,F48Y,T52A,R99C	18.03 \pm 0.62 kcal/mol	-52.45 \pm 2.62 kcal/mol
S47A,T52A,T54Q,R99C	14.40 \pm 0.80 kcal/mol	-61.56 \pm 2.70 kcal/mol
S47A,F48Y,T52A,T54Q	17.78 \pm 0.89 kcal/mol	-57.35 \pm 2.19 kcal/mol
Mouse Cys - S47A,F48Y,T52A,T54Q,R99C	16.27 \pm 0.50 kcal/mol	-62.54 \pm 1.60 kcal/mol
Mouse Sec - S47A,F48Y,T52A,T54Q,R99C	12.21 \pm 0.62 kcal/mol	-69.17 \pm 1.64 kcal/mol
WTmousecys	12.31 \pm 0.51 kcal/mol	-52.07 \pm 3.12 kcal/mol

Table 1: Free Energy Changes