

Native  
Structure

$$F_{mut} - F_{nat} = \Delta F < 0$$

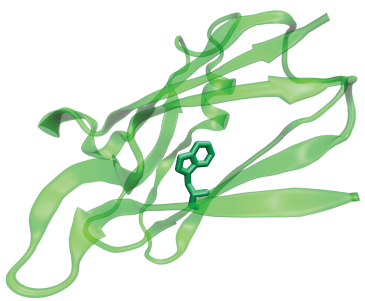
Mutated  
Structure

- ILE
- LYS
- TYR
- GLN
- GLU
- ASP
- ARG
- THR
- ASN
- SER
- HIS
- MET
- PHE
- PRO
- CYS
- LEU
- ALA
- GLY
- VAL

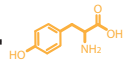
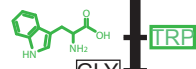


$$\frac{\langle E' \rangle - E_{mut}}{\sigma_E} = F_{mut} < 0$$

- ARG
- GLN
- TYR
- GLU
- LYS
- ASP
- TRP
- ASN
- PRO
- CYS
- THR
- HIS
- SER
- ILE
- PHE
- LEU
- ALA
- MET
- VAL
- GLY



$$\frac{\langle E \rangle - E_{nat}}{\sigma_E} = F_{nat} > 0$$



$\langle E \rangle$

$E_{nat}$

$E_{mut}$

$\langle E' \rangle$