

Thermodynamics of Folding

Thermodynamics of Folding: $\Delta G = \Delta H - T\Delta S$

- $\Delta G = 1.56$ kcal/mol at 54 °C
- $\Delta H = -35.10$ kcal/mol
- $\Delta S = -112$ cal/(K·mol)
- $T_m = 40$ °C assuming a 2 state model.
- linear DNA folding.
- Ionic conditions: $[Na^+] = 0.05$ M, $[Mg^{++}] = 0$ M.
- Standard errors are roughly $\pm 5\%$, $\pm 10\%$, $\pm 11\%$ and 2-4 °C for free energy, enthalpy, entropy and T_m , respectively.

Structure 2

0F_CGTGT_end

$\Delta G = 1.56$

Structural element	δG	Information
External loop	-0.37	1 ss bases & 1 closing helices.
Stack	-0.70	External closing pair is a ² -T ³¹
Stack	-0.70	External closing pair is c ³ -G ³⁰
Stack	-0.70	External closing pair is a ⁴ -T ²⁹
Stack	-1.35	External closing pair is c ⁵ -G ²⁸
Helix	-3.45	5 base pairs.
Hairpin loop	5.38	Closing pair is g ⁶ -C ²⁷
