Thermodynamics of Folding

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

- ΔG = -0.06 kcal/mol at 54 °C
- ΔH = -58.40 kcal/mol
- ΔS = -178.3 cal/(K·mol)
- T_m = 54.3 °C assuming a 2 state model.
- linear DNA folding.
- Ionic conditions: $[Na^+]$ = 0.05 M, $[Mg^{++}]$ = 0 M.
- Standard errors are roughly ±5%, ±10%, ±11% and 2-4 °C for free energy, enthalpy, entropy and T_m, respectively.

Structure 1
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ΔG = -0.06

Structural element	δG	Information
External loop	0.00	3 ss bases & 1 closing helices.
Stack	-1.35	External closing pair is c [1]-G [24]
Stack	-0.70	External closing pair is g [2]-C [23]
Stack	-0.70	External closing pair is t [3]-A [22]
Stack	-0.70	External closing pair is g [4]-C [21]
Stack	-0.70	External closing pair is t [5]-A [20]
Helix	-4.15	6 base pairs.
Hairpin loop	4.09	Closing pair is g [6]-C [19]