Thermodynamics of Folding

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

- ΔG = 0.37 kcal/mol at 54 °C
- ΔH = -47.30 kcal/mol
- ΔS = -145.7 cal/(K·mol)
- T_m = 51.4 °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
0F_CGTGT_end
ΔG = 0.37

Structural element	δG	Information
External loop	-0.07	0 ss bases & 1 closing helices.
Stack	-0.70	External closing pair is a ^{1}-T ^{26}
Stack	-0.70	External closing pair is c ^{2}-G ^{25}
Stack	-0.70	External closing pair is a ^{3}-T ^{24}
Stack	-1.35	External closing pair is c ^{4}-G ^{23}
Stack	-0.56	External closing pair is g ^{5}-C ^{22}
Helix	-4.01	6 base pairs.
Hairpin loop	4.45	Closing pair is a ^{6}-T ^{21}