

**Table 1**  
*Calculated intrinsic bond energies and association constants*

| Association reaction    | Intrinsic bond energy  | Association constant                             |
|-------------------------|--|--|
| Diagonal dimer          | $\Delta G^{\text{diag}} = -3.6 \text{ kcal/mol}$                           | $K_A^{\text{diag}} = 0.003 \text{ M}^{-1}$       |
| Longitudinal dimer      | $\Delta G^{\text{long}} = -10.7 \text{ kcal/mol}$                          | $K_A^{\text{long}} = 500 \text{ M}^{-1}$         |
| End association         | $\Delta G^{\text{long}} + \Delta G^{\text{diag}} = -14.3 \text{ kcal/mol}$ | $K_A^{\text{ee}} = 2 \times 10^5 \text{ M}^{-1}$ |
| Fragmentation-annealing | $2\Delta G^{\text{long}} + \Delta G^{\text{diag}} = -25 \text{ kcal/mol}$  | $K_A^{\text{frag}} = 10^{13} \text{ M}^{-1}$     |