

**TABLE 1** Surface energy of ligand-receptor interactions

Ligand-receptor	$W_{\text{tot}}$ ( $\mu\text{J}/\text{m}^2$ )	$W_{\text{non-sp}}$ ( $\mu\text{J}/\text{m}^2$ )	$W_{\text{sp}}$ ( $\mu\text{J}/\text{m}^2$ )	$K_{\text{d}}$ (M)
Biotin-avidin	$200 \pm 9$	$38 \pm 2$	$162 \pm 9$	$10^{-15}$
Biotin-streptavidin	$168 \pm 3$	negligible	$168 \pm 3$	$10^{-15}$
Biotin-stv38	$85 \pm 1.4$	$52 \pm 1.6$	$33 \pm 1.6$	$10^{-8}$
Iminobiotin-avidin	$48 \pm 1.2$	$19 \pm 0.8$	$29 \pm 1.2$	$4.4 \times 10^{-7}$