



## Interaction of a series of fluorescent probes with glucose oxidase

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The fluorescence of a family of cationic styrylpyridinium probes, 4-p-(dimethylaminostyryl)-1-methylpyridinium (DSM), 4-p-(dimethylaminostyryl)-1-hexylpyridinium (DSP-6), and 4-p-(dimethylaminostyryl)-1-dodecylpyridinium (DSP-12) increases dramatically upon association with glucose oxidase (GOx) and exhibits blue shifts (up to 30 nm) of the emission maxima. Enhancement in fluorescence has also been observed for another, neutral, probe (DMC) with a small spectral shift in the presence of GOx. Based on the fluorescent spectroscopy data, binding parameters (number of binding sites and equilibrium dissociation constant or partition coefficient) characterizing the probe-protein interactions have been determined. Binding data obtained with styrylpyridinium probes having hydrophobic tails of different lengths as well as the effective binding observed for neutral DMC suggest that hydrophobic interactions play a predominant rôle in the probes' non-covalent binding to GOx.

**Keywords:** binding parameters, fluorescent probe-protein interaction, glucose oxidase, polarity