CHAIRMAN'S OVERVIEW

Site Heterogeneity in Protein Luminescence

The Holy Grail of protein luminescence is to be able to interpret emission spectra with specific chemical and conformational details for the individual aromatic residues. Our experience with a wide variety of globular proteins has been that the emission is responsive to widespread features of protein structure. Nevertheless, there are also examples of heterogeneous emission from hen lysozyme and horse liver alcohol dehydrogenase. My own studies with the Bence Jones family of proteins have illustrated the great diversity in emission behavior potentially available for individual residues. I consider it wise always to consider that for most globular proteins there will be unequal contributions from individual residues to the entire emission, in spite of any modifications brought about by electronic energy transfers.

The symposium in New Orleans brought together a diversity of procedures that can disclose heterogeneity of emission. Though the methods are specific for excited-state studies, obvious parallels apply to many spectroscopic techniques, particularly absorption and chiroptical spectroscopies. I expect an increasing application of the procedures briefly outlined in the following abstracts as proteins have their luminescence characterized.

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