

MPM4-1

ACTION SPECTRA: WHY ARE THEY IMPORTANT AND HOW ARE THEY CONSTRUCTED AND INTERPRETED?

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Action spectra have been with us for years, and most investigators in photochemistry and photobiology have heard much about them. Action spectra can be complex and confusing, however, and understanding action spectra, their potential and their limitations, are important issues. Knowing how to accurately construct an action spectrum, what pitfalls to watch out for, and, importantly, how to interpret one requires some familiarity with the process. While the theory behind action spectroscopy is relatively straight forward, the practical aspects of determining one can be far more formidable. This is especially true for biological action spectra. In today's school, I will cover some history, theory, interpretation, and uses of action spectra, such as weighting functions for risk assessment and the potential for photoreceptor identification. An action spectrum, properly constructed and understood, can be a very powerful photobiological tool helping to elucidate light-initiating reactions driving complicated photobiological or photochemical processes.