SPECTROSCOPY AND DYNAMICS OF JET-COOLED P-COUMARIC ACID ESTERS: AN INVESTIGATION INTO THE PHOTOISOMERIZATION OF THE PHOTOACTIVE YELLOW PROTEIN

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Trans to cis photoisomerization of the chromophore of the photoactive yellow protein (PYP) is the first of a chain of events that leads to the negative phototaxis to blue light of certain purple bacteria. The spectroscopy and dynamics of jet-cooled p-coumaric acid methylester and the p-coumaric acid methythiolester, as well as of their clusters with water have been studied using mass-resolved REMPI and LIF experiments in combination with ab initio calculations. Because the esters more closely mimic the chromophore of PYP, we believe that these experiments contribute to a better understanding of the photoisomerization dynamics of PYP.