

## NMR comparison of Photoactive yellow protein mutants with the native form

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Photoactive yellow protein (PYP), a 14-kDa water-soluble protein of 125 residues, is a member of the xanthopsin family of eubacterial blue-light photoreceptors. On absorption of light, PYP enters a photocycle that ultimately transduces the energy contained in a light signal into an altered biological response.

PYP is considered a prototype of the PAS domain superfamily of signaling proteins<sup>1</sup>, and for that reason PYP has been extensively studied as a model protein. Its structure is well-known, and has been elucidated using NMR data<sup>2</sup>.

Aimed to deduce the structural effects introduced by the mutation at key folding positions in the PYP sequence and correlate them with its bioactivity, we present here the preliminary results based on 2D-TOCSY and 2D-NOESY experiments of some of these PYP mutants and compare them with the native form. In addition to the spectral changes introduced by the natural ligand, the chromophore thiol ester-linked *p*-coumaric acid that joins covalently to the protein, has also been studied in one of these mutants.

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