

Report on experiment MX1270: Online microspectrophotometry: structural basis for lightinduced switching/bleaching in photochromic fluorescent proteins..

This experiment aimed at investigating the photoswitching mechanisms of several photoswitchable fluorescent proteins, notably Padron and IrisFP. The main proposer, unfortunately, could not attend this experiment. Significant time was lost in setting up the experiment, and most of the remaining beamtime was dedicated to the IrisFP project, with the aim of deciphering structural changes associated to the photofatigue (bleaching) mechanism. Data could be collected on a few crystals. Unfortunately, the procedure to generate fatigue was not sufficiently refined, and the optical spectra obtained from the quite bulky crystals were not sufficiently informative due to saturation. Density maps clearly suggest structural changes, but publication quality data will require repeating the experiment.