| ESRF | **Experiment title:** MAD experiment on a small heat shock protein from plant. | **Experiment number:** LS1672 |
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**Report:**

Small heat shock proteins (sHSP) form a diverse family of proteins that are found in all organisms analysed so far. They protect cells from stress by binding unfolded proteins. SHSP's have a size of 12-27 kDa, but generally form large oligomers of different sizes. The structure of the sHSP from archea *M. Janashii* (Kim et al.) gave a first insight in such a complex, but only revealed the structure of the C-terminal domain of the two-domain sHSP monomer.

We have carried out a three wavelength MAD experiment on a plant small heat shock protein with an engineered selenomethionine in addition to its seleno-substituted natural methionine. The data sets, which were collected at a resolution of 2.85 Å, were 99.9% complete with Rmerge's in the range of 8-9%. Together with MAD data from a single selenium variant of the protein, collected previously on the BM14 (see experimental report LS1527) we obtained an electron density map of sufficient quality to trace the polypeptide chain. The structure is currently being refined.