Status: structure completed using MAD data collected during this visit to ESRF

Publication:

Molecular Cell. 2002. 10:1007-17.
"Topography for independent binding of alpha-helical and PPII-helical ligands to a peroxisomal SH3 domain" Douangamath A, Filipp FV, Klein AT, Barnett P, Zou P, Voorn-Brouwer T, Vega MC, Mayans OM, Sattler M, Distel B, Wilmanns M.

Abstract: While the function of most small signaling domains is confined to binary ligand interactions, the peroxisomal Pex13p SH3 domain has the unique capacity of binding to two different ligands, Pex5p and Pex14p. We have used this domain as a model to decipher its structurally independent ligand binding sites. By the combined use of X-ray crystallography, NMR spectroscopy, and circular dichroism, we show that the two ligands bind in unrelated conformations to patches located at opposite surfaces of this SH3 domain. Mutations in the Pex13p SH3 domain that abolish interactions within the Pex13p-Pex5p interface specifically impair PTS1-dependent protein import into yeast peroxisomes.