

P011 Characterisation of plant sterol carrier protein-2
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The sterol carrier protein-2 (SCP-2) is an intracellular, small, basic protein domain that *in vitro* enhances the transfer of lipids between membranes. It is expressed in bacteria, archaea and eukaryotes. The biological function of SCP-2 is unclear, although there are indications that at least the mammalian SCP-2 may be involved in the catabolism of branched-chain and very long chain fatty acids. Bacterial and archaean SCP-2 are expressed from separate, independent genes, while in eukaryotes SCP-2 is often expressed in the C-terminal of multi-domain proteins. Such fusions has not been retained in plant genomes, which solely express unfused SCP-2 domains. The *A. thaliana* locus At5g42890 encodes the *A. thaliana* SCP-2 (AtSCP-2), which is a 13.6 kDa protein with pI of 9.2. AtSCP-2 is predominantly localized to the peroxisomes. Structural models of apo-AtSCP-2 and the ligand-bound conformation of AtSCP-2 revealed high similarity with mammalian SCP-2-like domains. The AtSCP-2 models in both forms have a similar hydrophobic ligand-binding tunnel, which is extremely suitable for lipid binding. AtSCP-2 protein has lipid transfer activity *in vitro*, showing a preference for phosphatidylcholine, ergosterol and phosphatidic acid. We will present our recent results on function, expression, evolution, specificity and structure of SCP-2 from plants.