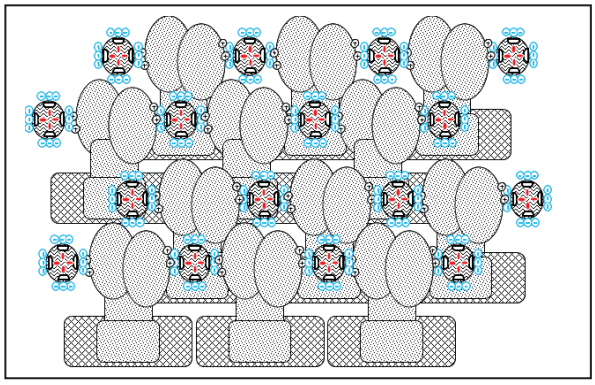
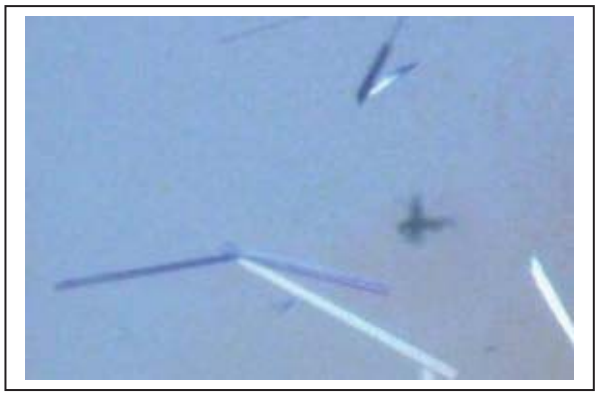
CALIXAR™ Additive Kit

Adding greater success to your membrane protein crystallization....

The ***CALIXAR™ Additive Kit*** makes it possible – for the first time - to actively promote the crystallization of membrane proteins. Crystallization is greatly improved via the formation of an organized aggregation state or 'supramolecular clusters' of the CALIXAR molecules in space, leading to increased crystal formation.

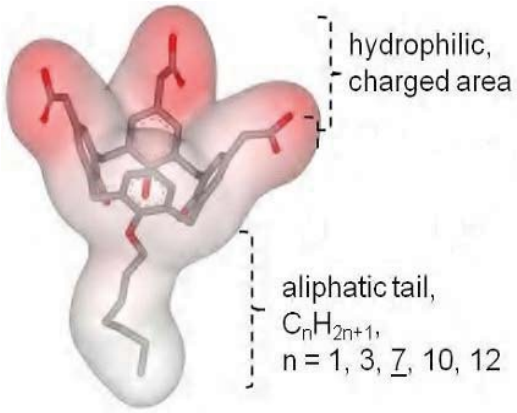
What do we mean "supramolecular clusters"?
Supramolecular clusters are the organization of several CALIXAR derivatives of micellar-type. These mini-micelles become intercalated between the membrane proteins via ionic interactions (see below) and act like a molecular glue to increase crystalline organization.





Crystals of a 12TMD protein grown in the presence of the CALIXAR additives.

The *CALIXAR Additive kit* containing 6 compounds varying in the length of the alkyl chain (C4C1, C4C3, C4C5, C4C7, C4C9 and C4C10) is available now as:
***MD1-80* - 24 x 50 µL microfuge tubes**



Above - the chemical structure of CALIXAR derivatives:

CALIXAR derivatives have been designed and synthesized to add to the classical amphiphilic properties a capacity to generate networks of salt bridges around the protein. These salt bridges lie close to the membrane domain with positively-charged residues positioned at the membrane-cytosol interface of the protein.

CALIXAR™ Additive Kit Features:

- Designed specifically to promote the crystallization of functional membrane proteins.
- Overcome the defects, drawbacks and obstacles of prior art- such as detergent-based additive kits and small molecule 'bullet' screens.
- Classical amphiphilic properties generate a network of salt bridges around the protein, make hydrophobic contacts and « π-stacking » Interactions.
- Can also be applied to soluble proteins.

References:
"Protein crystallization additives, use and process". Falson, P. *et al.* - WO 2010116055.
"Structuring detergents for extracting and stabilizing functional membrane proteins."Matar-Merheb R. *et al.* PLoS One. 2011 Mar 31;6(3):e18036