



Facial Amphiphiles for the Stabilization of Integral Membrane Proteins

Summary:

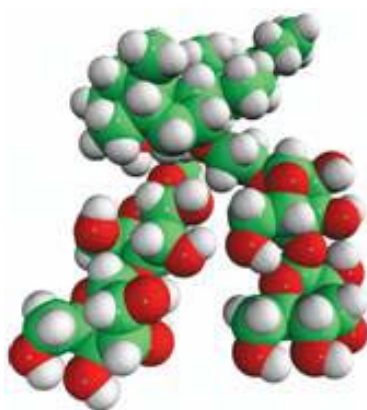


Figure 1 FACADE-EM

Structural and functional studies of integral membrane proteins (IMP's) require their stabilization outside their lipid bilayer environment. This is normally done using detergents that are structurally similar to lipids with an alkyl chain at one end and a polar head group at the other. However, IMP's still tend to denature or aggregate in the presence of common detergents and therefore represents a significant challenge. In an effort to develop new types of amphiphilic molecules that can stabilize integral membrane proteins (IMP's), we have departed from the canonical "polar-head/nonpolar-tail" design of detergents and turned to molecules that exhibit facial amphiphlicity. A new two-dimensional amphiphile with hydrophobic and hydrophilic faces, 3 α -hydroxy-7 α ,12 α -di-((O- β -D-maltosyl)-2-hydroxyethoxy)-cholane, has been designed, tested, and has shown superior ability to stabilize IMPs.

Availability: FACADE-EM can now be purchased through [Avanti](#)

References:

Q. Zhang, X. Ma, A. Ward, W. X. Hong, V. P. Jaakola, R. C. Stevens, M. G. Finn and G. Chang (2007) **Designing facial amphiphiles for the stabilization of integral membrane proteins** *Angew Chem Int Ed Engl* 46: 7023-5 ;  [PubMed](#)