Fos Cholines

Lipids are commonly used by researchers to stabilize membrane proteins. However, the common challenge with working with lipids is their high cost and lack of solubility in water.

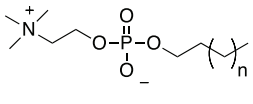
Anatrace® scientists answered the challenge and developed innovative Anatrace Fos-Choline® detergents. This class of lipid-like surfactants has the basic properties of lipids—namely their ability to stabilize membrane proteins—combined with the characteristics of a water-soluble molecule. Anatrace offers several modified derivatives of popular Fos-Cholines. These modified derivatives enhance stability and solubility outside of the native lipid bi-layer. This way you can be sure that the stabilizer is firmly attached to your protein.

The Fos-Choline detergents have been successfully used in membrane protein studies by NMR[1-3]. Short chain phospholipids such as dihexanoylphosphatidylcholine (DHPC), have been used to solubilize and reconstitute integral membrane proteins. These compounds form water-soluble micelles in solution and have been shown to maintain native protein structure and function when used in membrane protein purification protocols[4-6].

Fos-Cholines employ charged amine and phosphate groups in combination with an alkyl chain to produce a zwitterionic surfactant. This unique architecture is water-soluble and capable of both stabilizing and keeping membrane proteins soluble in aqueous solutions. This surfactant also produces micelles and is able to extract membrane proteins from cellular membranes.

Anatrace innovates so you can too.

FIG. 1. FOS CHOLINE



n = 5, octyl phoscholine
n = 6, nonyl phoscholine
n = 7, decyl phoscholine
n = 8, undecyl phoscholine
n = 9, dodecyl phoscholine
n =10, tridecyl phoscholine
n = 11, tetredecyl phoscholine
n = 13, hexadecylphoscholine

ROOT	PRODUCTS	ANAGRADE®	SOL-GRADE®	DEUTERATED
F300	Fos-Choline-8	√	√	
F302	Fos-Choline-9	√	√	
F304	Fos-Choline-10	√	√	√
F306	Fos-Choline-11	√	√	√
F308	Fos-Choline-12	√	√	√
F310	Fos-Choline-13	√	√	

References:

1. Evanics, F., *et al.* (2006) *J. Am. Chem. Soc.*, **128**, 8256-8264.
2. Hwang, P.M., *et al.* (2002) *Proc Natl Acad Sci USA*, **99**, 13560-13565.
3. Oxenoid, K. and Chou, J. J. (2005) *Proc Natl Acad Sci USA*, **102**, 10870-10875.
4. Hauser, H. (2000) *Biochim Biophys Acta* **1508**, 164-181.
5. Fernandez, C., *et al.* (2001) *FEBS Lett.* **504**, 173-178.
6. Mandal, A., *et al.*(2006) *Biochim Biophys Acta.* **1760**, 20-31.

434 W. Dussel Drive, Maumee, OH 43537 | **P:** 800-252-1280 | 419-740-6600 | **F:** 419-740-6630 | **E:** customerservice@anatrace.com | **W:** anatrace.com