Pluronic® F-127

Table 1. Contents and storage information.

Product	Amount	Concentration	Storage	Stability
P3000MP	1 mL	20% (w/v) solution in dimethylsulfoxide (DMSO)	• Room temperature • DO NOT FREEZE	6 months
P6866	30 mL	0.2 µm–filtered 10% (w/v) solution in H_2O		6 months
P6867	2 g solid	Not applicable		6 months

Introduction

Pluronic® F-127 is a nonionic, surfactant polyol (molecular weight approximately 12,500 daltons) that has been found to facilitate the solubilization of water-insoluble dyes and other materials in physiological media.[1] Pluronic® F-127 has been used to help disperse acetoxymethyl (AM) esters of fluorescent ion indicators such as fura-2, indo-1, fluo-3, and SBFI; it appears to be required with SBFI-AM or PBFI-AM, and optional with other indicators. Pluronic® F-127 may also be useful for dispersing other lipophilic probes. Appropriate controls should be performed to make certain that Pluronic® F-127 is not altering the membrane properties of the cell. For the convenience of our customers, Invitrogen offers Pluronic® F-127 in three forms as shown in Table 1.

Guidelines for Use

Handling Solid Pluronic® F-127 and Stock Solutions

Dissolve 2 g of Pluronic® F-127 (P6867) in 10 mL of anhydrous dimethylsulfoxide (DMSO) to give a 20% (w/v) stock solution. This may require heating at ~40°C for about 20 minutes. Store solution at room temperature. Do not refrigerate or freeze the solutions because Pluronic® F-127 may come out of solution. If the product does crystallize, it can be reheated until it goes back into solution. If precipitation is observed in purchased solutions of Pluronic® F-127 (P6866, P3000MP), the product may be resolubilized by heating at ~40°C and vortexing before use.

Using Pluronic® F-127

The experimental conditions for loading cells with AM esters varies with cell type due to differences both in probe uptake and in the intracellular esterase activity required for hydrolysis of the AM esters. Solutions of the AM esters in DMSO must be kept anhydrous since

the solvent will readily take up moisture, leading to loss of cell-loading efficacy. Pluronic® F-127 should be added only to working solutions. Typically, a small volume of the AM ester, dissolved at 1–5 mM in DMSO, is mixed with the 20% (w/v) Pluronic® F-127 stock solution in DMSO at a ratio of 1:1 immediately before use. The solution of AM ester and Pluronic® F-127 is then diluted into the cell-loading buffer to achieve a final AM ester concentration of between 1 µM and 10 µM and the cells are incubated for between 10 minutes and 1 hour. The final concentration of Pluronic® F-127 is normally kept at or below 0.1%. More weakly fluorescent indicators, such as the AM esters of SBFI, PBFI, quin-2, and Fura Red may require more concentrated loading solutions and correspondingly greater amounts of Pluronic® F-127.[2] In general it is desirable to use the minimum amount of AM ester needed to achieve adequate fluorescence signal to noise levels. Loading may be done at any temperature that is tolerable for the cells. Note that the incubation temperature generally affects the extent of intracellular dye compartmentalization.[3,4] After labeling, the cells are washed with **fresh medium** before beginning the experiment.

References

1. J Membrane Biol 19, 1 (1974); **2.** J Biol Chem 265, 19543 (1990); **3.** Methods Enzymol 302, 341 (1999); **4.** Methods Enzymol 307, 441 (1999).

Product List **Current prices may be obtained from our website or from our Customer Service Department.**

Cat. no.	Product Name	Unit Size
P6867	Pluronic® F-127 *low UV absorbance*	2 g
P3000MP	Pluronic® F-127 *20% solution in DMSO*	1 mL
P6866	Pluronic® F-127 *10% solution in water* *0.2 µm filtered*	30 mL
P10020	PowerLoad™ 100X concentrate	5 mL
P36400	Probenecid, water soluble	10 × 77 mg

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