

Product Information

FSL-GB3

Catalog Number **F9807**

Storage Temperature -20°C

Synonym: FSL-GB3(GALa4GALb4GLCb)-SA1-L1

Product Description

Molecular formula: $\text{C}_{68}\text{H}_{122}\text{N}_2\text{NaO}_{26}\text{P}$

Molecular weight: 1437.66

FSL-GB3 is a KODE™ technology construct designed to label hydrophobic surfaces, including living cells, with the blood group GB3 trisaccharide (also known as Pk). All KODE FSL constructs consist of three essential designable features:

- functional component (F)
- spacer (S)
- diacyl lipid (L)

FSL-GB3 is comprised of the blood group GB3 (Pk) trisaccharide $\text{Gal}\alpha 4\text{Gal}\beta 4\text{Glc}\beta$ representing F, conjugated via an $\text{O}(\text{CH}_2)_3\text{NH}$ spacer (SA1) to an activated adipate derivative of dioleoylphosphatidylethanolamine (L1). All FSL constructs disperse in biocompatible media, and spontaneously and stably incorporate into cell membranes. Cells modified with KODE constructs are known as kodecytes¹ and usually maintain their normal vitality and functionality.

FSL-GB3 has been specifically designed to insert into the membranes of live cells, labeling the membrane with the blood group GB3 antigen. The FSL constructs will remain in active cell membranes for up to 12 hours and indefinitely in inactive membranes (such as red cells) in serum-free medium.

FSL-GB3 can also be used to modify other hydrophobic surfaces including fixed cells and solid phase surfaces. This product has been used *in vitro* to inhibit HIV virions and bind to veratoxin.²

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

A Stock Solution is prepared by reconstituting the product at a concentration of 2 mg/ml in saline or PBS. Buffered solutions are preferred for long-term storage. The product should not be reconstituted in water, unless used immediately as the product is unstable when stored in water.

The 2 mg/ml Stock Solution can be frozen in aliquots for later usage. Thawed product should be briefly sonicated before use. The Stock Solution can be diluted in buffers containing protein. The Stock Solution should not be diluted in buffers containing lipids (e.g., serum) or other hydrophobic components as the FSL will associate with this material and insertion into cells will be reduced.

Storage/Stability

Store unopened product at -20°C . Store the Stock Solution in aliquots at -20°C . Avoid repeated freezing and thawing of solutions. Solutions in PBS, pH 7, can be stored at $2-8^{\circ}\text{C}$ for up to 2 weeks.

Procedure

Cell labeling – Add 1 volume of FSL-GB3 Working Solution (up to 2 mg/ml diluted in PBS) to 1 volume of cells. Incubate for 2 hours (incubation range 1–12 hours) at a temperature of 37°C (temperature range $4-37^{\circ}\text{C}$) to allow molecules to spontaneously insert into cell membranes. Wash with PBS or other appropriate buffer (may be optional). Store kodecytes in serum free medium.

Note: Rate of FSL insertion is primarily determined by FSL concentration, incubation time, and temperature.

References

1. Henry, S.M., Modification of red blood cells for laboratory quality control use. *Curr. Opin. Hematol.*, **16**, 467-472 (2009).
2. Harrison, A.L., et al., A synthetic globotriaosyl-ceramide analogue inhibits HIV-1 infection *in vitro* by two mechanisms. *Glycoconj. J.*, **27**, 515-24 (2010).
3. Harrison, A.L., et al., Synthetic Pk inhibits HIV-1 infection *in vitro* by two mechanisms. 19th Annual Canadian Conference of HIV/AIDS Research, Saskatoon, SK, May 2010. *Can. J. Infec. Dis. Med. Microbiol.*, **21**(Suppl B), 25B (2010).
4. Branch D.R., et al., A synthetic, water dispersible glycolipid analogue of the Pk blood group antigen completely blocks HIV-1 infection. AABB 2008 Annual Meeting, October 2008, Montréal, Québec, Canada. *Transfusion*, **48** (2S) Suppl., 104A (2008)

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