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# Product Information

**FSL-Tyr1**

Catalog Number **F7558**
Storage Temperature –20 °C

Synonym: FSL-Tyr1(forY)-SC2-L1

**Product Description**
Molecular formula: $C_{91}H_{140}N_{16}O_{33}PS$
Molecular weight: 2017.15

FSL-Tyr1 is a KODE™ technology construct designed to label hydrophobic surfaces including living cells and virions with $^{125}I$. All KODE FSL constructs consist of three essential designable features:

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

FSL-Tyr1 is comprised predominantly of an *N*-formyl-tyrosine monomer, which can be radiolabeled with $^{125}I$, representing F, conjugated via a carboxymethylglycine based linker (SC2) to an activated adipate derivative of dioleoylphosphatidylethanolamine (L). All FSL constructs disperse in biocompatible media, and spontaneously and stably incorporate into cell/virion membranes. Cells and virions modified with KODE constructs are known as kodecytes[1] or kodevirions,[2] respectively, and usually maintain their normal vitality and functionality.

Following $^{125}I$ radiolabeling, FSL-Tyr1 has been specifically designed to create $^{125}I$ labeled kodecytes or kodevirions.[2]

**Reagents Required but Not Provided for $^{125}I$ Radiolabeling Procedure**
- Iodination tubes (Cat. 28601, Thermo Fisher Scientific Inc.)
- $Na^{125}I$ (Cat. NEZ-033A, Perkin-Elmer)
- Microcon-10 filter device (Millipore Corporation)
- Tris-HCl-NaCl buffer (25 mM Tris-HCl, pH 7.5, with 0.4 M NaCl)

**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**
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.

**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 °C for up to 2 weeks.

**Procedure**
Iodination of FSL-tyrosine to FSL-$^{125}I$
1. Wet interior surface of iodination tube with 1 mL of Tris-HCl-NaCl buffer and decant.
2. Add 100 µL of Tris-HCl-NaCl buffer to the tube, followed by 1 mCi of $Na^{125}I$. Incubate at room temperature for 6 minutes with swirling every 30 seconds.
3. Transfer the activated $Na^{125}I$ solution to a new centrifuge tube containing 150 µL of FSL-Tyr1 Stock Solution (0.3 mg). Incubate at room temperature for 8 minutes, with swirling every 30 seconds.
4. Transfer reaction solution to a Microcon-10 filter device. Rinse the reaction tube with 250 µL of Tris-HCl-NaCl buffer and add to reaction solution. Centrifuge the filter device for 30 minutes at 15,000 × *g*. Collect flow-through solution.
5. Rinse the reaction tube with an additional 300 µL of Tris-HCl-NaCl buffer and add to Microcon-10 filter device. Centrifuge for 30 minutes at 15,000 × *g*. Collect second flow-through solution.

The flow-through solutions contain the radiolabeled FSL-Tyr1 (FSL-$^{125}I$). Quantify all fractions using a dose calibrator prior to pooling, then aliquot solution and store at –20 °C.

FSL radioiodination can be confirmed by SDS-PAGE on a 15% acrylamide gel in non-reducing sample buffer.

Cell/Virion labeling - Add 1 volume of FSL-$^{125}$I (1–100 μg/mL diluted in PBS) to 1 volume of cells/virions. Incubate for 1 hour at 37 °C. Wash with PBS or other appropriate buffer (may be optional). Store kodecytes/kodevirions 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. Hadac, E.M. et al., Fluorescein and radiolabeled Function-Spacer-Lipid constructs allow for simple *in vitro* and *in vivo* bioimaging of enveloped virions. J. Virol. Methods, **176**, 78-84 (2011).


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