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FRONTIERS IN LIFE SCIENCE

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SLIPT-PM

Catalog NO. FDV-0045

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Product Background

Self-localizing (SL) **l**igand-**i**nduced **p**rotein **t**ranslocation (**SLIPT**), originally developed by Dr. Shinya Tsukiji, Nagoya Institute of Technology, is a novel technology for controlling intracellular localization of proteins by small compounds. The SLIPT platform is a versatile single protein component system and can be applied to various proteins. SLIPT platform requires two primary components. One is a chemical reagent called self-localizing (SL) ligand, and another is a genetically engineered tag-protein that selectively binds to the SL ligand. SL ligand has a specific ligand for the tag-protein conjugated to an organelle-selective accumulation motif via a flexible linker. The Protein of interest (POI) fused to tag-protein can be translocated to the target organelle directionally by each organelle-selective SL ligand.

Our **SLIPT-PM** reagent is a plasma membrane (PM)-selective SL ligand (original compound name; m^{D}cTMP, see Ref.2 and Ref.3) and used with a genetically engineered eDHFR mutant called ^{iK6}DHFR. ^{iK6}DHFR-fused POI will rapidly translocate to the PM by SLIPT-PM reagent and stably tether on the inner leaflet of the PM. The PM-localized ^{iK6}DHFR-fused POI by SLIPT-PM reagent will quickly release to the cytosol by adding free-TMP, which is provided as a kit component. PM-cytosolic shuttling of ^{iK6}DHFR-fused POI can be reversibly controlled several times by SLIPT-PM and free-TMP (Figure).

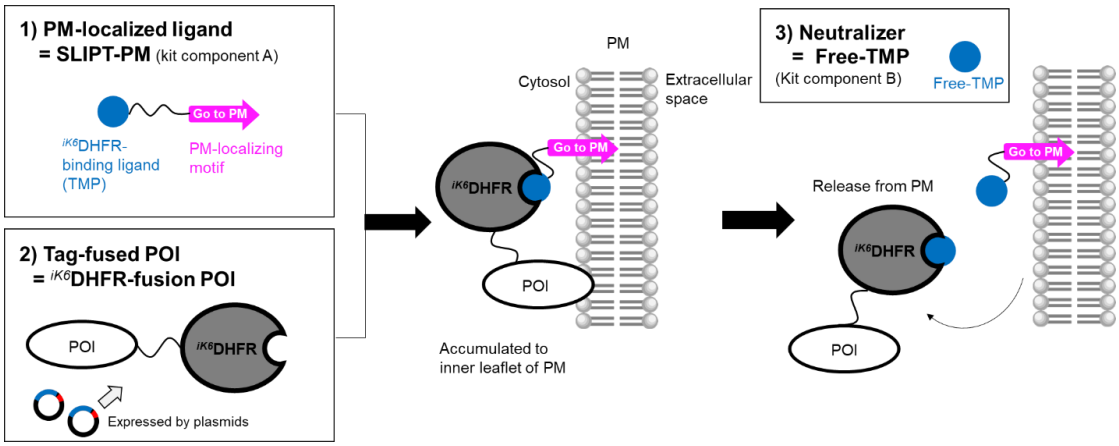

Figure Overview of translocation of ^{iK6}DHFR-fused POI by SLIPT-PM and Free-TMP

Download detail information

Please download **"SLIPT-PM Experimental Guide Book"** from Funakoshi website. The Guide Book shows detail background, principle of SLIPT, experimental guides and application data.

For worldwide customers: https://www.funakoshi.co.jp/exports_contents/95015

For Japanese customers: https://www.funakoshi.co.jp/contents/70604

Description

Catalog Number: FDV-0045

Kit component:

A: SLIPT-PM

Size: 0.2 mg

Formulation: $C_{59}H_{101}N_{11}O_{16}S_1$ + CF_3COOH

Molecular weight: 1366.60 g/mol

Solubility: Soluble in DMSO

Storage: -20ºC

Reconstitution: Stock solution recommended concentration 5 mM to 10 mM in 100% DMSO

Note:

After reconstitution in DMSO, aliquot and store at -20 °C. Avoid repeated freeze-thaw cycles. Protect from light.

B: Free-TMP

Size: 5 mg

Formulation: $C_{14}H_{18}N_4O_3$

Molecular weight: 290.32 g/mol

Solubility: Soluble in DMSO

Storage: -20ºC

Reconstitution: Stock solution recommended concentration 100 mM in 100% DMSO

Note:

After reconstitution in DMSO, aliquot and store at -20 °C. Avoid repeated freeze-thaw cycles.

NOTE: This product does not include ^{iK6}DHFR-expression plasmids. ^{iK6}DHFR-expressing plasmids should be got from addgene or constructed from eDHFR^{WT}-expressing plasmids by yourself. Detail plasmid information are shown in "SLIPT-PM Experimental Guide Book".

Reference

1. Ishida *et al.*, *J. Am. Chem. Soc.*, **135**, 12684-12689 (2013) Synthetic self-localizing ligands that control the spatial location of proteins in living cells.
2. Nakamura *et al.*, *ACS Chem. Biol.*, **15**, 837-843 (2020) Designer palmitoylation motif-based self-localizing ligand for sustained control of protein localization in living cells and *Caenorhabditis elegans*
3. Hatano et al., *Cell Chem. Biol.*, *in press* A chemogenetic platform for controlling plasma membrane signaling and synthetic signal oscillation.