



**TP-beta**  
**P027**  
**1  $\mu$ mol**

- **Known Property** pancreatic beta cell probe
- **Application** Immunofluorescence
- **Cell selectivity mechanism:** GOLD (Glut2)
- **Storage**
  - ① Delivery: Room Temperature
  - ② Dried compound: 4 °C or -20 °C
  - ③ Compound solution: 4 °C or -20 °C

## ORDER

- SenPro
- [order@senprobe.com](mailto:order@senprobe.com)
- [www.senprobe.com](http://www.senprobe.com)

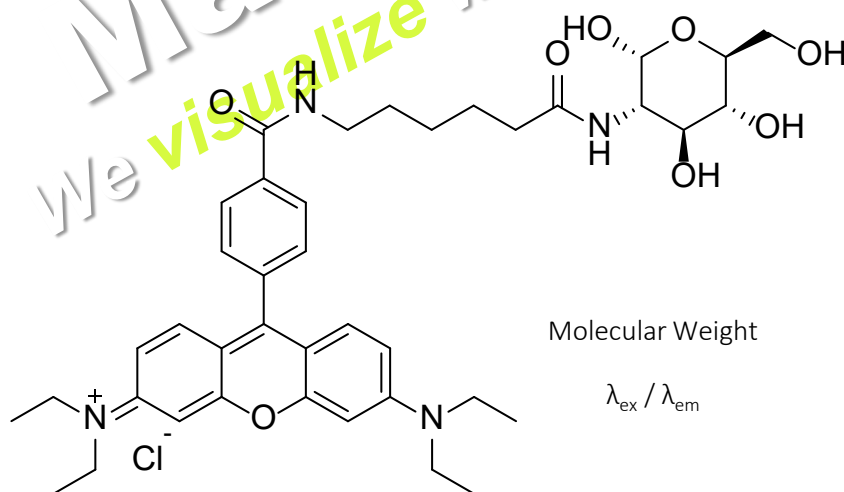
## General Use Guide

More than 1/100 dilution of 10mM of DMSO stock solution is essential

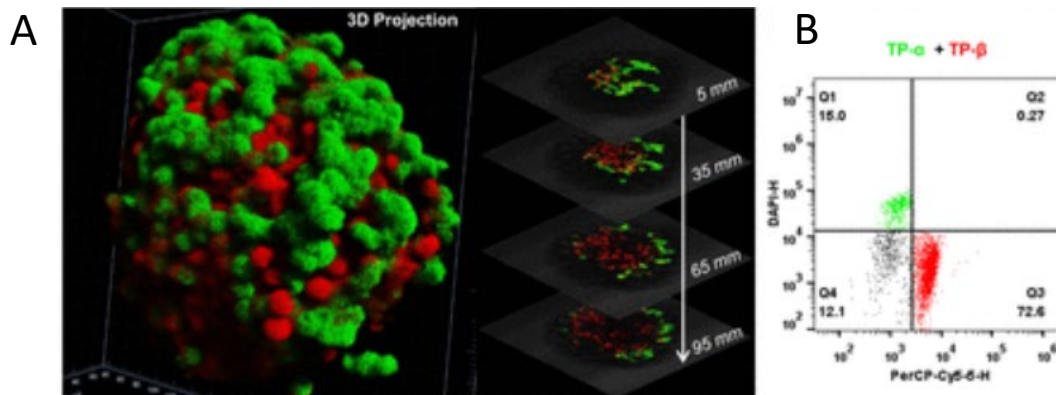
For biomedical use to avoid DMSO concentration higher than 1%.

Working concentrations for specific applications should be determined by the investigator.

It is recommended to use up the buffer diluted solution within one day. The compound may be decomposed or precipitated out from buffer solution.



**TP-beta** (Two Photon beta cell probe) is a pancreatic beta cell selective probe over alpha cell. TP-beta is a optimized fluorescent 2-glucose derivative and the target is presumably Glut2, which is overexpressed in beta cell of pancreatic islet. **TP-beta** penetrates well into the core of the cultured dissociated pancreatic islets and stains most of the beta cells (74-75% of total cells in islet).



(A) 3D surface projection of the TP Z-stack images for a live islet stained with TP islet cocktail (step size =  $0.17 \mu\text{m}$ ) using IMARIS image processing software. Representative sectional overlaid TP images of the live islet over the depth range of 5–95  $\mu\text{m}$  are also shown. Excitation was done at 820 nm using a femtosecond laser; TP- $\alpha$  and TP- $\beta$  emissions were monitored at 430–530 and 550–650 nm, respectively. Images are representative of  $n = 50$  islets. (B) TP islet cocktail-stained islet cells showing population separation for three different cell types. Live pancreatic islets were stained with TP islet cocktail ( $10 \mu\text{M}$  TP- $\beta$  +  $0.5 \mu\text{M}$  TP- $\alpha$ ) and incubated for 2 h at  $37^\circ\text{C}$  in DMEM containing 10 mM D-glucose before analysis. The results reflect cell counts of 10 000.

- Related probes: PiY, PiF

## Reference

1. **Two-photon dye cocktail for dual-color 3D imaging of pancreatic beta and alpha cells in live islets**, Agrawalla, B. K.; Lee, H. W.; Phue, W. H.; Raju, A.; Kim, J. J.; Kim, H. M.; Kang, N. Y.\*; Chang, Y. T.\* J. Am. Chem. Soc. 2017, 139, 3480-3487.