



PiF
P031
1 μmol

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

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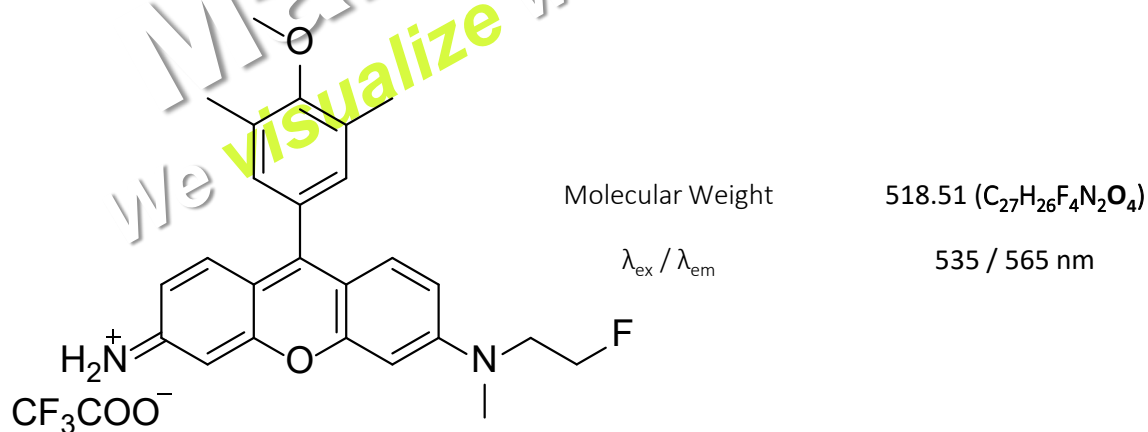
General Use Guide

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

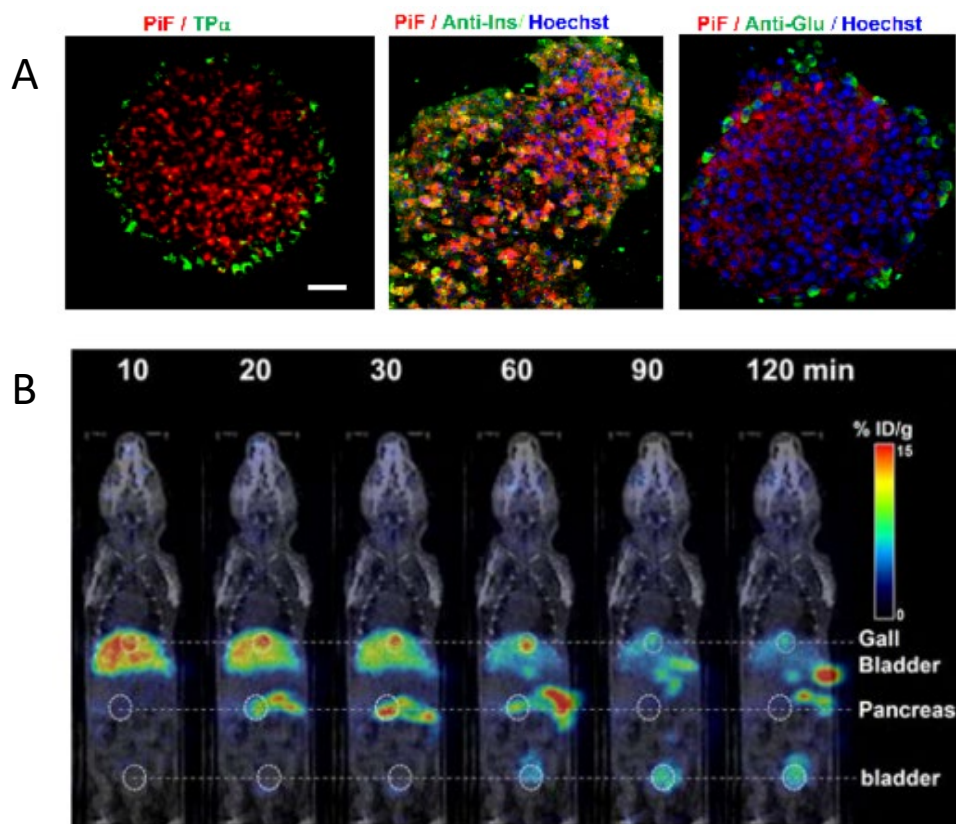
For biomedical use to avoid DMSO concentration higher than 1%.

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.



PiF (Pancreatic islet Fluorinated probe) is a superior pancreatic beta cell probe over **PiY**, facilitating the pancreatic tissue preparation from day to hours. PiF could detect not only healthy pancreatic beta cells, but also transplanted islet in the liver. PiF has built in F atom which could be replaced with ^{18}F for PET imaging. PET imaging of pancreatic islet was demonstrated by replacing ^{19}F with ^{18}F of PiF



(A) Fluorescent images were acquired after the cell culture of isolated islets. (Left) Merged fluorescent images of PiF ($\lambda_{ex} = 535 \text{ nm}$, $\lambda_{em} = 585 \text{ nm}$, red) and TP α ($\lambda_{ex} = 370 \text{ nm}$, $\lambda_{em} = 475 \text{ nm}$, green). (Middle) Merged confocal images of PiF (red) and anti-insulin (green: pseudocolor). Anti-insulin was imaged under a Cy5 filter. (Right) Merged confocal images of PiF (red) and anti-glucagon (green: pseudocolor). Anti-glucagon was imaged under a Cy5 filter. Hoechst was used for nuclei staining. (B) In vivo PET/CT images of [^{18}F]PiF in ICR mice. ICR mice ($n = 3$) were intravenously dosed with approximately 7.4 MBq of [^{18}F]PiF.

- Related probes: PiY, TP-beta

Reference

1. **Multimodal imaging probe development for pancreatic β -cells: from fluorescence to PET**, Kang, N. Y.; Lee, J.; Lee, S. H.; Song, I. H.; Hwang, Y. H.; Kim, M. J.; Phue, W. H.; Agrawalla, B. K.; Wan, S. Y. D.; Lalic, J.; Park, S. J.; Kim, J. J.; Kwon, H. Y.; Im, S. H.; Bae, M. A.; Ahn, J. H.; Lim, C. S.; Teo, A. K. K.; Park, S.; Kim, S. E.; Lee, B. C.; Lee, D. Y.*; Chang, Y. T.* J. Am. Chem. Soc. 2020, 142, 3430-3439.