

# PRODUCT INFORMATION



## Ps-Tac

Item No. 42357

**Purity:** ≥95%  
**Ex./Em. Max:** 493/510 nm  
**Supplied as:** A solid  
**Storage:** -20°C  
**Stability:** ≥4 years  
**Special Conditions:** Avoid freeze-thaw cycles

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Description

Ps-Tac is a cell-permeable quenched fluorescent probe for the detection of glutathione S-transferase  $\pi$  1 (GSTP1) activity in live cells. It is selective for GSTP1 over 18 GST subtypes in MCF-7 cells expressing the recombinant human enzymes. Ps-Tac is composed of a fluorescein derivative protected by the GSTP1 substrate 5-methyl-2-nitrobenzylidene.<sup>1</sup> Upon glutathionylation by GSTP1, nitrite is released, and the fluorescence of the unquenched glutathionylated fluorescein derivative can be quantified using excitation/emission maxima of 493/510 nm, respectively.

### Protocol

1. Prepare a working solution of Ps-Tac at a concentration of 1-10  $\mu$ M with and without 10  $\mu$ M MK-571 in Hanks' balanced salt solution (HBSS) with 20 mM HEPES.  
*NOTE 1: Optimize the concentrations of reagents, as needed. Ps-Tac is not stable in aqueous solution as the acetyl group may be hydrolyzed in water. The working solution should be prepared fresh for each experiment. Highly buffered media with HEPES, such as HBSS, are recommended to stabilize Ps-Tac. FBS-containing media are not compatible with this probe as FBS may promote deacetylation of Ps-Tac.*  
*NOTE 2: MK-571 is a multidrug resistance-associated protein (MRP) inhibitor. Depending on the cell type, the glutathionylated probe may be subject to MRP-dependent excretion, which will decrease the intracellular fluorescence intensity. It is recommended to determine the necessity of MK-571 prior to establishing the experimental protocol.*
2. Remove culture medium from cells and wash twice with PBS.
3. Add Ps-Tac working solution.
4. Incubate cells for at least 5 minutes.  
*NOTE: Optimize the incubation time, as needed.*
5. Remove the working solution, wash cells twice with PBS, and add fresh medium.  
*NOTE: Phenol red-free buffers are highly recommended.*
6. Image cells by fluorescence microscopy.  
*NOTE: Ps-Tac and its hydrolyzed form are not tethered in cells by commercial cell fixation reagents such as paraformaldehyde. A cell-fixed condition is not available for this reagent.*

### Reference

1. Mori, M., Fujikawa, Y., Kikkawa, M., *et al.* A highly selective fluorogenic substrate for imaging glutathione S-transferase P1: Development and cellular applicability in epigenetic studies. *Chem. Commun. (Camb)* 55(56), 8122-8125 (2019).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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