

Store at  
-20°C**ITD-1**

#28992

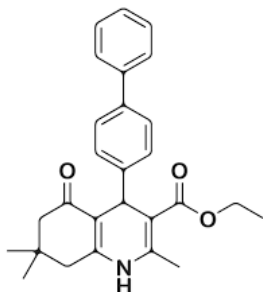
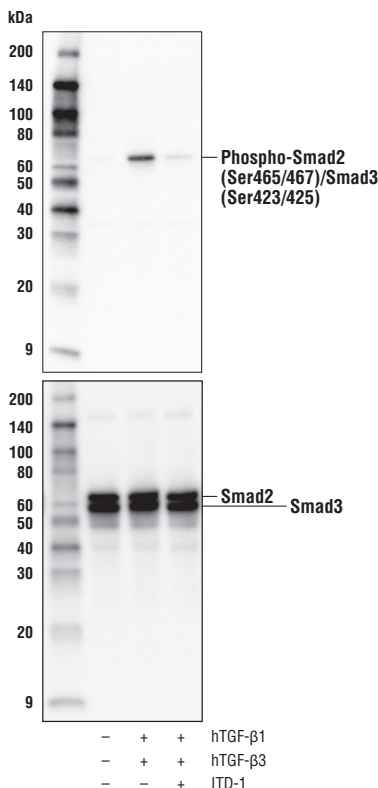
5 mg

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**Background:** ITD-1 is a potent and selective inhibitor of Transforming Growth Factor- $\beta$  (TGF- $\beta$ ) signaling. This small molecule targets TGF- $\beta$  receptor II by increasing proteasomal degradation, eliminating the receptor from the cell surface, inhibiting downstream intracellular signaling with an  $IC_{50}$  of 0.85  $\mu$ M (1). Activation of the TGF- $\beta$  receptor II leads to phosphorylation of Smad2/3 proteins, transmitting TGF- $\beta$  signals from the cell surface into the nucleus. ITD-1 inhibits the phosphorylation of Smad2/3 proteins but does not block kinase activity of TGF- $\beta$  receptors (type I and type II), demonstrating that ITD-1 disrupts TGF- $\beta$  signaling more selectively than other kinase inhibitors (2).

**Molecular Weight:** 415.5 g/mol**Purity:** >98%**Molecular Formula:** C<sub>27</sub>H<sub>29</sub>NO<sub>3</sub>**CAS:** 1099644-42-4**Solubility:** Soluble in DMSO at 8 mg/ml or ethanol at 4 mg/ml with slight warming.

Western blot analysis of extracts from HaCaT cells, untreated (-) or treated with hTGF- $\beta$ 3 #8425 and hTGF- $\beta$ 1 #8915 (100 ng/ml, 30 min; +) in the absence or presence of the TGF $\beta$  inhibitor ITD-1 (5  $\mu$ M, 18 hr; +), using Phospho-Smad2 (Ser465/467)/Smad3 (Ser423/425) (D27F4) Rabbit mAb #8828 (upper) or Smad2/3 (D7G7) XP® Rabbit mAb #8685 (lower).

**Storage:** Store lyophilized at -20°C, desiccated. In lyophilized form, the chemical is stable for 24 months. Once in solution, store at -20°C and use within 3 months to prevent loss of potency. Aliquot to avoid multiple freeze/thaw cycles.

**Directions for Use:** ITD-1 is supplied as a lyophilized powder. For a 10 mM stock, reconstitute 5 mg of powder in 1.2 ml of DMSO. Working concentrations and length of treatment can vary depending on the desired effect.

**Background References:**

- (1) Schade, D. et al. (2012) *J Med Chem* 55, 9946-57.
- (2) Willems, E. et al. (2012) *Cell Stem Cell* 11, 242-52.

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**Applications:** W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide **Species Cross-Reactivity:** H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.