

Store at  
-20°C**A 83-01****#75073**

5 mg

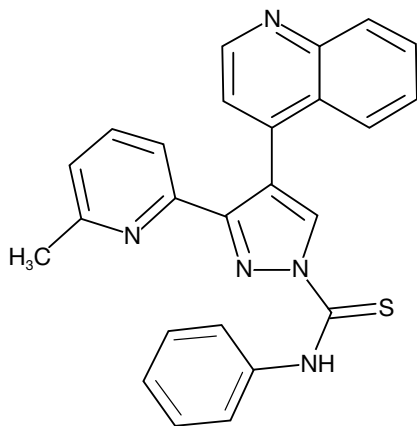
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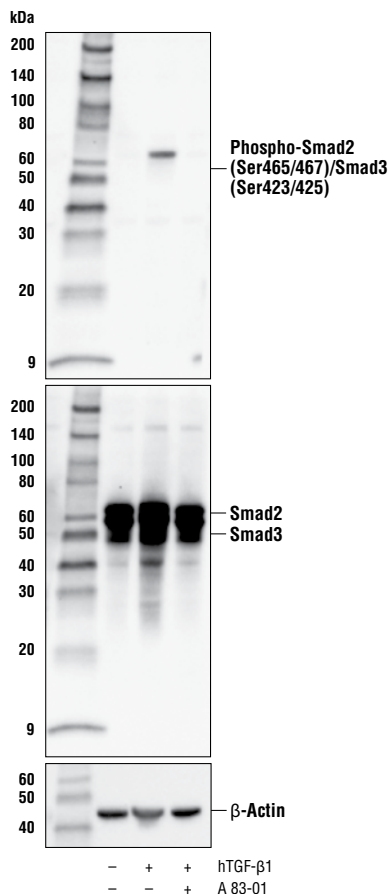
**For Research Use Only. Not For Use In Diagnostic Procedures.**

**Background:** A 83-01 is a potent and selective inhibitor of TGF- $\beta$  type I receptor ALK5 kinase, activin type IB receptor ALK4, and nodal type I receptor ALK7 with an IC<sub>50</sub> value of 12, 45, and 7.5 nM, respectively (1). This small molecule has also been shown to inhibit Smad2/3 phosphorylation along with TGF- $\beta$ -induced growth inhibition and induction of Twist and Wnt3 (1,2). A 83-01 can be used to stabilize rat induced pluripotent stem cell (riPSC) cultures by inhibiting spontaneous differentiation and increasing the clonal expansion efficiency (3).

**Molecular Formula:** C<sub>25</sub>H<sub>19</sub>N<sub>5</sub>S

**Molecular Weight:** 421.5 g/mol

**Purity:** >98%

**CAS:** 909910-43-6

**Solubility:** Soluble in DMSO at 20 mg/ml.


Western blot analysis of extracts from HT-1080 cells, untreated (-) or treated with Human Transforming Growth Factor  $\beta$ 1 (hTGF- $\beta$ 1) #8915 (10 ng/ml, 30 min; +) with or without pretreating the cells with A 83-01 (1  $\mu$ M, 1 hr; +), using Phospho-Smad2 (Ser465/467)/Smad3 (Ser423/425) (D27F4) Rabbit mAb #8828 (upper), Smad2/3 (D7G7) XP® Rabbit mAb #8685 (middle), or  $\beta$ -Actin (D6A8) Rabbit mAb #8457 (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 2 months to prevent loss of potency. *Aliquot to avoid multiple freeze/thaw cycles.*

**Directions for Use:** A 83-01 is supplied as a lyophilized powder. For a 10 mM stock, reconstitute 5 mg of powder in 1.18 ml of DMSO. Working concentrations and length of treatment can vary depending on the desired effect.

**Background References:**

- (1) Tojo, M. et al. (2005) *Cancer Sci* 96, 791-800.
- (2) Wu, Y. et al. (2017) *Breast Cancer Res Treat* 163, 449-60.
- (3) Li, W. et al. (2009) *Cell Stem Cell* 4, 16-9.

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