

Product Data Sheet

Product Name: NIBR-LTSi

Cat. No.: GC71472

Chemical Properties

Cas. No.

Formula $C_{18}H_{20}N_4O$ M.Wt 308.38

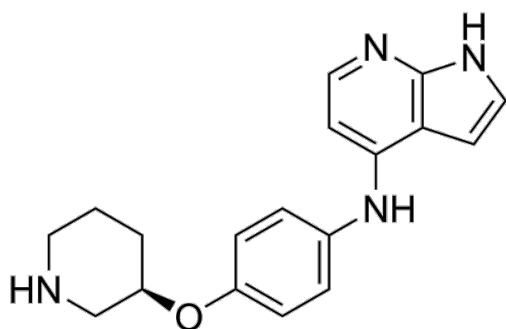
Solubility DMSO : 2 mg/mL (6.49 mM);
ultrasonic and warming and heat to
60°C; Hygroscopic DMSO has a
significant impact on the solubility of
product, please use newly opened
DMSO)

Storage -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure



Protocol

Cell experiment [1]:

Caution: Product has not been fully validated for medical applications. For research use only.

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Cell lines	Periodontal ligament stem cell
Preparation Method	NIBR-LTSi (2.5μM) was added to the culture medium of Periodontal ligament stem cell (PDLSCs) at passage 20.
Reaction Conditions	2.5μM; 3 days
Applications	The inhibition of senescence-associated P21 by senolytics were significantly reversed. NIBR-LTSi treatment increased the expression level of the antiapoptotic gene BCL2, whereas decreased the expression level of the proapoptotic gene BAX.
Animal experiment [2]:	
Animal models	C57BL/6 mice
Preparation Method	Partial hepatectomy (PHx) was performed on mice. Dosing of the mice with NIBR-LTSi (30mg/kg, 100mg/kg) or vehicle was performed directly after PHx. The regenerated liver was harvested 30 hours post-surgery. PHx samples were fixed in 10% (vol/vol) neutral-buffered formalin, paraffin embedded and sectioned.
Dosage form	30 or 100mg/kg; oral gavage; a single dose
Applications	NIBR-LTSi robustly activated YAP signaling and induced hepatocyte proliferation.

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References:

- [1] Jia L L, Xiao H, Hao Z H, et al. Senolytic elimination of senescent cells improved periodontal ligament stem cell-based bone regeneration partially through inhibiting YAP. *Biochim Biophys Acta Mol Cell Res.* 2025 Mar;1872(3):119921.
- [2] Namoto K, Baader C, Orsini V, et al. NIBR-LTSi is a selective LATS kinase inhibitor activating YAP signaling and expanding tissue stem cells in vitro and in vivo. *Cell Stem Cell.* 2024 Apr 4;31(4):554-569.e17.

Background

NIBR-LTSi is a highly selective, active-site binding LATS kinase inhibitor displayed an IC₅₀ of 2.16μM. Since LATS kinases are direct negative regulators of YAP activity, NIBR-LTSi has good oral bioavailability and favorable pharmacokinetic (PK) profile enable YAP activation in vivo^[1].

In vitro, HEK293A cells were treated with 5μM NIBR-LTSi for 24 hours increased YAP nuclear translocation, reduced YAP phosphorylation, and enhanced the expression of YAP target genes (*CYR61*, *CTGF*, *ANKRD1*). NIBR-LTSi treatment also increased cell proliferation^[1]. 50μM NIBR-LTSi were included in mouse explant cultures and incubated for 24h. NIBR-LTSi treatment activates YAP in basal epithelial cells and induced wound healing in some mouse explants cultured in air-liquid interface conditions^[2]. NIBR-LTSi (2.5μM) was added to the culture medium of periodontal ligament stem cell (PDLSCs) at passage 20 with senolytics for 3 days. The inhibition of senescence-associated P21 by senolytics were significantly reversed. NIBR-LTSi treatment increased the expression level of the anti-apoptotic gene BCL2, whereas decreased the expression level of the pro-apoptotic gene BAX^[3].

In vivo, NIBR-LTSi oral administrated (100mg/kg) or intravenously injected (1mg/kg) into C57BL/6 mice inhibited YAP phosphorylation in liver tissue, indicating effective LATS inhibition. Treatment of C57BL/6 WT mice with a single dose of NIBR-LTSi (either 30 or 100mg/kg) by oral gavage immediately after partial hepatectomy and monitored proliferation 30 h later. While vehicle-treated mice only showed few proliferating hepatocytes, NIBR-LTSi significantly induced hepatocyte proliferation in a dose dependent manner^[1].

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- [1] Namoto K, Baader C, Orsini V, et al. NIBR-LTSi is a selective LATS kinase inhibitor activating YAP signaling and expanding tissue stem cells in vitro and in vivo. *Cell Stem Cell*. 2024 Apr 4;31(4):554-569.e17.
- [2] Tsissios G, Leleu M, Hu K, et al. Species-specific oxygen sensing governs the initiation of vertebrate limb regeneration. *bioRxiv*. 2024 Dec;629359
- [3] Jia L L, Xiao H, Hao Z H, et al. Senolytic elimination of senescent cells improved periodontal ligament stem cell-based bone regeneration partially through inhibiting YAP. *Biochim Biophys Acta Mol Cell Res*. 2025 Mar;1872(3):119921.

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