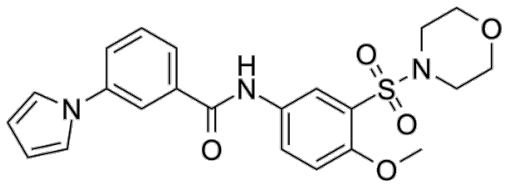
Product Data Sheet

Product Name: NCGC00378430
Cat. No.: GC62286

Chemical Properties

Cas. No.	920650-00-6		
Formula	$C_{22}H_{23}N_3O_5S$	M.Wt	441.5
Solubility	DMSO : 100 mg/mL (226.50 mM; Need ultrasonic)	Storage	Store at -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]:

Cell lines	MCF7-SIX1 cells (human breast adenocarcinoma cell line with SIX1 overexpression), MCF7-Ctrl cells (control), T47D cells (human breast ductal carcinoma cell line), MDA-MB-231 cells (human breast adenocarcinoma cell line)

Product Data Sheet

Preparation Method	Cells were maintained in Dulbecco's modified Eagle's medium (DMEM) supplemented with 10% fetal bovine serum (FBS). MCF7-SIX1 and MCF7-Ctrl cells were treated with 10μM NCGC00378430 for 3 days. T47D and MDA-MB-231 cells were treated with 20μM NCGC00378430 for 3 days.
Reaction Conditions	10 or 20nM; 3 days.
Applications	NCGC00378430 significantly disrupted the SIX1-EYA2 protein-protein interaction and reduced SIX1/EYA2 transcriptional activity. NCGC00378430 partially reversed transcriptional and metabolic profiles induced by SIX1 overexpression, including reversing gene expression signatures of epithelial-mesenchymal transition (EMT). In MCF7-SIX1 cells, NCGC00378430 suppressed TGF-β signaling (reduced phospho-SMAD3), restored membranous E-cadherin localization, and decreased fibronectin expression.

Animal experiment [2]:

Animal models	Six1 conditionally overexpressing mice (Six1-CTG) in alveolar epithelial cells and wild-type (WT) C57BL/6 mice.
Preparation Method	Mice were treated with NCGC00378430 (20mg/kg) via transnasal delivery every three days. For the preventive regimen, treatment started on day 3 post-bleomycin (BLM) induction until day 21. For the therapeutic regimen in WT mice, treatment started on day 10 post-BLM induction until day 21.
Dosage form	20mg/kg; intranasal; every three days for 19 or 12 days.

Caution: Product has not been fully validated for medical applications. For research use only.
Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

Applications	NCGC00378430 treatment attenuated fibrotic changes (reduced Ashcroft score and expression of Fibronectin and Collagen I), reduced inflammatory cell infiltration (decreased total protein in BALF), and improved declining lung function (increased compliance, reduced elastance) in BLM-induced pulmonary fibrosis models. NCGC00378430 showed both preventive and therapeutic effects.

References:
[1] Zhou H, Blevins MA, Hsu JY, et al. Identification of a Small-Molecule Inhibitor That Disrupts the SIX1/EYA2 Complex, EMT, and Metastasis. Cancer Res. 2020 Jun 15;80(12):2689-2702.
[2] Fan Y, Tian Z, Zheng H, et al. Six1 promotes alveolar epithelium senescence in pulmonary fibrosis through regulating Tp53. Int Immunopharmacol. 2025 Dec 3;166:115554.

Background

NCGC00378430 is a potent inhibitor of the SIX1/EYA2 protein-protein interaction [1]. NCGC00378430 disrupts the SIX1/EYA2 complex, reverses SIX1-induced TGF-β signaling activation, and counteracts the epithelial-mesenchymal transition (EMT) phenotype. NCGC00378430 is applicable in research areas such as breast cancer and pulmonary fibrosis[2-3].

In vitro, NCGC00378430 (10μM) was used to treat KIRC cells for 3 days. NCGC00378430 did not alter cell viability or proliferation, nor did NCGC00378430 impair the binding of SIX1 to the ITGB1 promoter. NCGC00378430 had no effect on SIX1-induced ITGB1 transcription, but did disrupt the SIX1-EYA2 interaction[1]. NCGC00378430 (10–20μM) was applied to MCF7-SIX1, T47D, and MDA-MB-231 breast cancer cell lines for 3 days. NCGC00378430 significantly disrupted the SIX1/EYA2 protein-protein interaction and reversed the TGF-β signaling activation and EMT phenotype induced by SIX1 overexpression[2].

In vivo, NCGC00378430 (25mg/kg) was administered via local injection (near the tumor cell injection site) every other day to NSG mice bearing MCF7-SIX1 tumors, from day 3 to day 21 post-injection. NCGC00378430 significantly inhibited breast cancer metastasis but did not affect the growth of the primary tumor[2]. NCGC00378430 (20mg/kg) was delivered intranasally every three days to either

Product Data Sheet

Six1 conditionally overexpressing mice (from day 3 to day 21) or wild-type C57BL/6 mice (from day 10 to day 21) in a bleomycin-induced pulmonary fibrosis model. NCGC00378430 alleviated fibrotic changes and enhanced lung function[3].

References:

[1] Huang S, Hu J, Hu M, et al. Cooperation between SIX1 and DHX9 transcriptionally regulates integrin-focal adhesion signaling mediated metastasis and sunitinib resistance in KIRC. Oncogene. 2024 Sep;43(39):2951-2969.
[2] Zhou H, Blevins MA, Hsu JY, et al. Identification of a Small-Molecule Inhibitor That Disrupts the SIX1/EYA2 Complex, EMT, and Metastasis. Cancer Res. 2020 Jun 15;80(12):2689-2702.
[3] Fan Y, Tian Z, Zheng H, et al. Six1 promotes alveolar epithelium senescence in pulmonary fibrosis through regulating Tp53. Int Immunopharmacol. 2025 Dec 3;166:115554.

Caution: Product has not been fully validated for medical applications. For research use only.
Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA