# NSC-87877 disodium

**Cat. No.:** HY-18756A

**CAS No.:** 56932-43-5

**Molecular Formula:** $C_{19}H_{11}N_3Na_2O_7S_2$

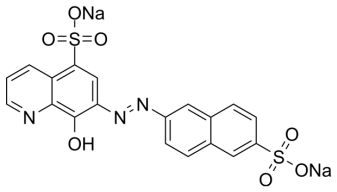
**Molecular Weight:** 503.42

**Target:** Phosphatase; Apoptosis; SHP2

**Pathway:** Metabolic Enzyme/Protease; Apoptosis; Protein Tyrosine Kinase/RTK

**Storage:** -20°C, sealed storage, away from moisture

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)




## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : 125 mg/mL (248.30 mM; Need ultrasonic)

$H_2O$ : 50 mg/mL (99.32 mM; Need ultrasonic)

**Preparing Stock Solutions**

| Solvent / Mass / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|
| 1 mM | 1.9864 mL | 9.9321 mL | 19.8641 mL |
| 5 mM | 0.3973 mL | 1.9864 mL | 3.9728 mL |
| 10 mM | 0.1986 mL | 0.9932 mL | 1.9864 mL |

Please refer to the solubility information to select the appropriate solvent.

## BIOLOGICAL ACTIVITY

**Description**

NSC-87877 disodium is a potent inhibitor of Shp2 and Shp1 protein tyrosine phosphatases (SH-PTP2 and SH-PTP1), with $IC_{50}$ values of 0.318 μM, 0.355 μM shp2 and shp1, respectively[1]. NSC-87877 also inhibits dual-specificity phosphatase 26 (DUSP26)[2].

**$IC_{50}$ & Target**

IC50: 0.318 μM (shp2), 0.355 μM (shp1)[1].

**In Vitro**

NSC-87877 (0-0.5 μM, 5 days) inhibits DUSP26 function in NB cell lines[3].

NSC-87877 (0-0.5 μM, 5 days) results in increased p53 phosphorylation (Ser37 and Ser46) and activation[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[2]

| | |
|---|---|
| Cell Line: | p53 wild-type neuroblastoma (NB) cell lines. |
| Concentration: | 0, 0.25, 0.5 μM. |
| Incubation Time: | 5 days. |

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|---|---|
| Result: | Resulted in increased p53 phosphorylation (Ser37 and Ser46) and activation, increased activation of downstream p38 effector proteins (heat shock protein 27 (HSP27) and MAP kinase-activated protein kinase 2 (MAPKAPK2)) and poly ADP ribose polymerase/caspase-3 cleavage.<br>Inhibited DUSP26 function in NB cell lines.<br>Resulted in apoptosis in many cell lines at varying $IC_{50}$ levels of 1.84 μM (IMR32), 6.35 μM (SK-N-SH), 8.69 μM (NB-19), 12.6 μM (SMS-KCN), 15.7 μM (SH-SY5Y), 15.8 μM (JF) and 19.0 μM (CHLA-225), respectively. |

**In Vivo**

NSC-87877 (30 mg/kg, IP once daily for 15 days) possesses excellent anti- neuroblastoma activity[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

| | |
|---|---|
| Animal Model: | Intrarenal neuroblastoma (NB) tumor mouse model in female nude mice[3]. |
| Dosage: | 30 mg/kg. |
| Administration: | IP once daily for 15 days. |
| Result: | Significantly inhibited NB tumor growth. |

## REFERENCES


[1]. Chen L, et al. Discovery of a novel shp2 protein tyrosine phosphatase inhibitor. Mol Pharmacol. 2006 Aug;70(2):562-70.

[2]. Song M, et al. NSC-87877, inhibitor of SHP-1/2 PTPs, inhibits dual-specificity phosphatase 26 (DUSP26). Biochem Biophys Res Commun. 2009 Apr 17;381(4):491-5.

[3]. Y Shi, et al. NSC-87877 inhibits DUSP26 function in neuroblastoma resulting in p53-mediated apoptosis. Cell Death Dis. 2015 Aug 6;6(8):e1841.





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