

Product Data Sheet

Product Name: SN50
Cat. No.: GC31642

Chemical Properties

Cas. No. 213546-53-3

SMILES Ala-Ala-Val-Ala-Leu-Leu-Pro-Ala-Val-Leu-Leu-Ala-Leu-Leu-Ala-Pro-Val-Gln-Arg-Lys-Arg-Gln-Lys-Leu-Met-Pro

Formula $C_{129}H_{230}N_{36}O_{29}S$ M.Wt 2781.5

Solubility Water : ≥ 50 mg/mL (17.98 mM) 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

AAVALLPAVLLALLAPVQRKRQKLMP

Protocol

Cell experiment [1]:

Cell lines Glioma stem-like cells GSC11 and GSC23 cells

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

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Cells were cultured in medium containing 2% B-27, 20 ng/mL EGF, and 20 ng/mL β -FGF in the presence or absence of SN50 (25 μ g/mL) for twenty-four hours.

Reaction Conditions 25 μ g/ml; 24 hours

Applications SN50 can induce GSC differentiation.

Animal experiment [2]:

Animal models Male Balb/c mice(8-12 weeks)

Mice was made by 50 μ l of lipopolysaccharide (LPS) (4 mg/ml) inhalation. Mice Preparation Method were intraperitoneally injected with different does of SN50 1 h before LPS inhalation.

Dosage form 100 μ l,10,30,60 μ g/ml; i.p.;1h

Applications SN50 inhibited expressions of TF and PAI-1 in mRNA and in protein levels in LPS-induced acute respiratory distress syndrome (ARDS) mice.

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References:

- [1]. Zhang L, Ren X, et.al. The NFκB inhibitor, SN50, induces differentiation of glioma stem cells and suppresses their oncogenic phenotype. *Cancer Biol Ther.* 2014 May;15(5):602-11. doi: 10.4161/cbt.28158. Epub 2014 Feb 20. PMID: 24557012; PMCID: PMC4026083.
- [2]. Wu Y, Wang Y, et.al. SN50 attenuates alveolar hypercoagulation and fibrinolysis inhibition in acute respiratory distress syndrome mice through inhibiting NF-κB p65 translocation. *Respir Res.* 2020 May 27;21(1):130. doi: 10.1186/s12931-020-01372-6. PMID: 32460750; PMCID: PMC7251840.

Background

SN50, the NF-κB cell-permeable inhibitory peptide. It is comprised of the hydrophilic region of the signal peptide of Kaposi fibroblast growth factor as a membrane translocating motif and a nuclear localization sequence derived from the p50 subunit of NF-κB^[1].

SN50(20 μg/ml; 12 hs) could induce the microglia differentiation into M2 type through the NF-κB pathway. The SN50-induced microglia can protect neurons from hypoxic injury^[2]. SN50 (25 μg/ml; 24 hs) could induce robust differentiation of GSCs, and the differentiated daughter cells lose the neuroglobular motility, invasiveness, and treatment insensitivity tumorigenicity of tumor stem cells^[4].

SN50(100μl, 10, 30, 60μg/ml; i.p.; 1h) attenuated alveolar hypercoagulation and fibrinolysis inhibition in ARDS via inhibition of NF-κB p65 translocation^[5]. SN50(1μM) protected against LPS-induced lung injury in isolated rat lungs by inhibiting NF-κB nuclear translocation^[6]. Topical SN50 (10μM; 12 days) suppressed nuclear factor-κB activation in local cells and reduced the incidence of epithelial defects/ulceration in C57BL/6 mice healing corneas^[7].

References:

- [1]. Lin YZ, Yao SY, et al. Inhibition of nuclear translocation of transcription factor NF kappa B by a synthetic peptide containing a cell membrane-permeable motif and nuclear localization sequence. *J Biol Chem.* 1995;270(24):14255-8.
- [2]. Chian CF, Chiang CH, et. al. Inhibitor of nuclear factor-κB, SN50, attenuates lipopolysaccharide-induced lung injury in an isolated and perfused rat lung model. *Transl Res.* 2014 Mar;163(3):211-20. doi 10.1016/j.trsl.2013.10.002. Epub 2013 Oct 12. PMID: 24646628.
- [3]. Zhang L, Ren X, et. al. The NFκB inhibitor, SN50, induces differentiation of glioma stem cells and

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[4]. Zhao K, Zhu BS, et, al. SN50 enhances the effects of LY294002 on cell death induction in gastric cancer cell line SGC7901. Arch Med Sci. 2013 Dec 30;9(6):990-8. doi: 10.5114/aoms.2013.39790. Epub 2013 Dec 26. PMID: 24482641; PMCID: PMC3902720.

[5]. Wu Y, Wang Y, et, al. SN50 attenuates alveolar hypercoagulation and fibrinolysis inhibition in acute respiratory distress syndrome mice through inhibiting NF- κ B p65 translocation. Respir Res. 2020 May 27;21(1):130. doi: 10.1186/s12931-020-01372-6. PMID: 32460750; PMCID: PMC7251840.

[6]. Chian CF, Chiang CH, et, al. Inhibitor of nuclear factor- κ B, SN50, attenuates lipopolysaccharide-induced lung injury in an isolated and perfused rat lung model. Transl Res. 2014 Mar;163(3):211-20. doi 10.1016/j.trsl.2013.10.002. Epub 2013 Oct 12. PMID: 24646628.

[7]. Saika S, Miyamoto T, et, al. The therapeutic effect of topical administration of SN50, an inhibitor of nuclear factor- κ B, in the treatment of corneal alkali burns in mice. Am J Pathol. 2005 May;166(5):1393-403. doi: 10.1016/s0002-9440(10)62357-7. PMID: 15855640; PMCID: PMC1606394.

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