DX600

Cat. No.: HY-P2222

CAS No.: 478188-26-0

Molecular Formula: $C_{141}H_{185}N_{35}O_{40}S_2$

Molecular Weight: 3074.33

Ac-GDYSHCSPLRYYPWWKCTYPDPEGGG-NH$_2$ (Disulfide bridge: Cys$_6$-Cys$_{17}$)

Sequence: Ac-Gly-Asp-Tyr-Ser-His-Cys-Ser-Pro-Leu-Arg-Tyr-Tyr-Pro-Trp-Trp-Lys-Cys-Thr-Tyr-Pro-NH2 (Disulfide bridge: Cys6-Cys17)

Sequence Shortening: Ac-GDYSHCSPLRYYPWWKCTYPDPEGGG-NH2 (Disulfide bridge: Cys6-Cys17)

Target: Angiotensin-converting Enzyme (ACE)

Pathway: Metabolic Enzyme/Protease

Storage: Sealed storage, away from moisture

Powder -80°C 2 years

-20°C 1 year

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

SOLVENT & SOLUBILITY

In Vitro

H_2O : 50 mg/mL (16.26 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	0.3253 mL	1.6264 mL	3.2527 mL
	5 mM	0.0651 mL	0.3253 mL	0.6505 mL
	10 mM	0.0325 mL	0.1626 mL	0.3253 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 50 mg/mL (16.26 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

DX600 is a selective ACE2 specific inhibitor (K_D: 1.3 nM), and does not cross-react with ACE. DX600 exacerbates diabetes-induced cardiovascular dysfunction and the increase in cardiac and renal NOX activity[1][2][3].

In Vitro

DX600 (1 μM) inhibits rhACE2 activity by 47%, with a pIC_{50} of 8.0[4].

DX600 (10 μM) inhibits ACE2 activity by 42% in human MNCs (mononuclear cells)[4].

DX600 (100 nM, 4 h) decreases NR 8383 cell growth and increase in TNF-a and IL-6 content in the supernatant (in the presence of LPS and osthole)[5].

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

In Vivo

DX600 (5 μg/kg/day, i.p., daily for 4 weeks) exacerbates diabetes-induced cardiovascular dysfunction in Streptozotocin (HY-13753)-treated diabetes rats[2].

DX600 (0.1 μmol/L/kg, i.v) increases thrombus weight by 30% in thrombosis model in rats[5].

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

Animal Model:	STZ-treated diabetes rats[2]
Dosage:	5 μg/kg/day
Administration:	i.p., daily for 4 weeks
Result:	Increased cardiac and renal NOX activity.

CUSTOMER VALIDATION

- Cell Metab. 2022 Feb 7;34(3):424-440.e7.

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REFERENCES

[1]. Yousif MH, et al. Characterization of Angiotensin-(1-7) effects on the cardiovascular system in an experimental model of type-1 diabetes. Pharmacol Res. 2012 Sep;66(3):269-75.

[2]. Svilenov HL, et al. Extrinsic stabilization of antiviral ACE2-Fc fusion proteins targeting SARS-CoV-2. Commun Biol. 2023 Apr 8;6(1):386.

[3]. Joshi S, et al. Angiotensin converting enzyme versus angiotensin converting enzyme-2 selectivity of MLN-4760 and DX600 in human and murine bone marrow-derived cells. Eur J Pharmacol. 2016 Mar 5;774:25-33.

[4]. Fraga-Silva RA, et al. ACE2 activation promotes antithrombotic activity. Mol Med. 2010 May-Jun;16(5-6):210-5.

[5]. Liao K, et al. Development of an enzymatic assay for the detection of neutralizing antibodies against therapeutic angiotensin-converting enzyme 2 (ACE2).J Immunol Methods. 2013 Mar 29;389(1-2):52-60.

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