Cyclo(Arg-Gly-Asp-D-Phe-Cys)

Cat. No.: HY-P2300

CAS No.: 862772-11-0

Molecular Formula: $C_{24}H_{34}N_8O_7S$

Molecular Weight: 578.64

Sequence Shortening: cyclo(RGDfC)

Target: Integrin

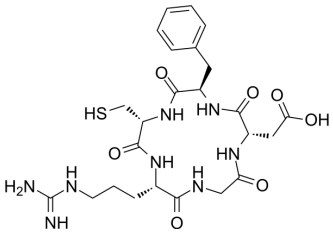
Pathway: Cytoskeleton

Storage: Sealed storage, away from moisture and light, under nitrogen

Powder -80°C 2 years

-20°C 1 year

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



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (86.41 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.7282 mL	8.6410 mL	17.2819 mL
	5 mM	0.3456 mL	1.7282 mL	3.4564 mL
	10 mM	0.1728 mL	0.8641 mL	1.7282 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (4.32 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (4.32 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (4.32 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Cyclo(Arg-Gly-Asp-D-Phe-Cys) (Cyclo RGDfC), a cyclic RGD peptide which has high affinity to αvβ3, can disrupt cell integrin interactions. Cyclo(Arg-Gly-Asp-D-Phe-Cys) inhibits pluripotent marker expression in embryonic stem cells (ESCs) and the tumorigenic potential of mESCs in vivo. Cyclo(Arg-Gly-Asp-D-Phe-Cys) can be used in the research of tumors[1].

IC_{50} & Target

αvβ3

In Vitro

Cyclo(Arg-Gly-Asp-D-Phe-Cys) (0.5 mM; 24 h) down-regulates the transcription factors Oct 4, Sox 2 and Nanog of mESCs[1].
Cyclo(Arg-Gly-Asp-D-Phe-Cys) (0.5 mM) inhibits integrin gene expression mESC-col I (type I collagen) constructs[1].
Cyclo(Arg-Gly-Asp-D-Phe-Cys) (0.5 mM)-treated mESC leads to the formation of aggregates and detachment from the surface [1].

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

RT-PCR[1]

Cell Line:	MESCs
Concentration:	0.5 mM
Incubation Time:	24 h
Result:	Down-regulated Oct 4, Nanog, Sox 2 by 99%, 97.5%, and 90% respectively. Up-regulated Rex1 gene expression.

In Vivo

Cyclo(Arg-Gly-Asp-D-Phe-Cys) (0.5 mM, 24 h)-treated mESCs in the presence/absence of Leukemia inhibitory factor (LIF) (injected in both thighs) generated teratomas in severe combined immunodeficiency (SCID) mice, which indicates that the process of mESC tumor formation in vivo is dependent on integrin interaction[1].

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

REFERENCES

[1]. Hazenbiller O, et al. Reduction of pluripotent gene expression in murine embryonic stem cells exposed to mechanical loading or Cyclo RGD peptide. BMC Cell Biol. 2017 Nov 14;18(1):32.

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