Cyclo(-RGDfK) TFA

Catalog No.C12985 Batch:C1298503

Product Datasheet

Technical Data

Formula	$C_{29}H_{42}F_3N_9O_9$					
Molecular Weight	717.69	**CAS No.**	500577-51-5			
Solubility (25°C)*	In vitro	DMSO	100 mg/mL (139.33 mM)			
		Water	100 mg/mL (139.33 mM)			
		Ethanol	Insoluble			
	In vivo (Add solvents to the product individually and in order)	Oral Administration	Homogeneous suspension	CMC-NA	≥5mg/ml	Taking the 1 mL working solution as an example, add 5 mg of this product to 1 ml of CMC-Na solution, mix evenly to obtain a homogeneous suspension with a final concentration of 5 mg/ml.
		Injection	Clear solution	5%DMSO [1]→ 40%PEG300 [2]→ 5%Tween80 [3]→ 50%ddH2O Validated by Capsid Bio labs. Should you need adjustments to this formulation, contact our sales team for custom testing.	5.000mg/ml (6.97mM)	Taking the 1 mL working solution as an example, add 50 μL of 100 mg/ml clarified DMSO stock solution to 400 μL of PEG300, mix evenly to clarify it; add 50 μL of Tween80 to the above system, mix evenly to clarify; then continue to add 500 μL of ddH2O to adjust the volume to 1 mL. The mixed solution should be used immediately for optimal results.
			Clear solution	5% DMSO [1]→ 95% Corn oil Validated by Capsid Bio labs. Should you need adjustments to this formulation, contact our sales team for custom testing.	0.830mg/ml (1.16mM)	Taking the 1 mL working solution as an example, add 50 μL of 16.6 mg/ml clear DMSO stock solution to 950 μL of corn oil and mix evenly. The mixed solution should be used immediately for optimal results.

* <1 mg/ml means slightly soluble or insoluble.
* Please note that Capsid Bio tests the solubility of all compounds in-house, and the actual solubility may differ slightly from published values. This is normal and is due to slight batch-to-batch variations.
* Room temperature shipping (Stability testing shows this product can be shipped at 2-8°C for storage purposes.)

Preparing Stock Solutions

Concentration \ Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.3934 mL	6.9668 mL	13.9336 mL
5 mM	0.2787 mL	1.3934 mL	2.7867 mL
10 mM	0.1393 mL	0.6967 mL	1.3934 mL
50 mM	0.0279 mL	0.1393 mL	0.2787 mL

Biological Activity

Description	Cyclo(-RGDfK) TFA is the salt product of Cyclo(-RGDfK) and trifluoroacetic acid (TFA). The addition of TFA enhances stability and biocompatibility. This compound effectively targets tumor microvessels and cancer cells by specifically binding to the cell surface **Integrin αvβ3**.
Targets	αvβ3 integrin [1]
In vitro	The constant of affinity (K_D) of Cyclo (-RGDfK-) for purified integrin is 41.70 nM.[2] This compound is reacting with HEK293(β3) cells moderately.[3] This compound modified micelles shows strong affinity to T-24 cells and strong inhibitory effect on the proliferation of T-24 cells.[4]
In vivo	In athymic mice bearing α(v)β(3)-integrin-positive C6 gliomas, Cyclo (-RGDfK-) TFA modification induces less tumor progression, less tumor metabolic activity, fewer intratumoral vessels.[5]

Protocol (from reference)

Kinase Assay:[6]

- **Isolated Integrin Binding Assays.**

  Purified integrin (1 μg/mL; 4℃) is used to coat 96-well microtitre plates, which are then blocked with bovine serum albumin (BSA) (3% in 1 mM $CaCl_{2,\ 1\ mM}$ $MgCl_{2,10\ pM}$ MnCl2, 100 mM NaC1,50 mM trishydroxymethyl-aminomethane; pH 7.4), and incubated (3 h at 30 ℃) with biotinylated ligands (1 pg/mL in binding buffer: 0.1% BSA, 1 mM CaCl2,1 mM MgCl2, 10 μM MnCl2, 100 mM NaCl, 50 mM trishydroxymethyl-aminomethane; pH 7.4) in the presence or absence of serially diluted peptides. After washing (3×5 min with binding buffer), bound biotinylated ligand is detected with alkaline-phosphatase conjugated goat antibiotin antibodies (1 μg/mL; 1 h, 37℃), using p-nitrophenyl phosphate as chromogen. This compound binding in the absence of competitor is defined as 100% signal; binding to blocked wells in the absence of integrin is defined as 0%. Concentrations of this chemical required for 50% inhibition of signal (IC50 values) are estimated graphically.

References

http://www.sciencedirect.com/science/article/pii/S00404039000… https://pubmed.ncbi.nlm.nih.gov/19259068/ https://pubmed.ncbi.nlm.nih.gov/17565663/

+ Expand

RETURN POLICY

Capsid Bio's Unconditional Return Policy ensures a smooth online shopping experience for our customers. If you are in any way unsatisfied with your purchase, you may return any item(s) within 7 days of receiving it. In the event of product quality issues, either protocol related or product related problems, you may return any item(s) within 365 days from the original purchase date. Please follow the instructions below when returning products.

SHIPPING & STORAGE

Capsid Bio products are transported at room temperature. If you receive the product at room temperature, please rest assured, the Capsid Bio Quality Inspection Department has conducted experiments to verify that the normal temperature placement of one month will not affect the biological activity of powder products. After collecting, please store the product according to the requirements described in the datasheet. Most Capsid Bio products are stable under the recommended conditions.

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EU Headquarters
Gajeva ulica 28, HR-10000 Zagreb, Croatia

US Headquarters
12222 Merit Dr STE 130 Dallas, Texas, 75251

UK Headquarters
121 ABILITY HOUSE, BROOKER ROAD, EN9 1JH, ESSEX

Orders: Sales@capsidbio.com
Enquiries: info@capsidbio.com
www.capsidbio.com