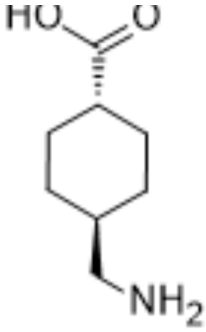
Tranexamic acid



Cat. No.: HY-B0149

CAS No.: 1197-18-8

Molecular Formula: $C_8H_{15}NO_2$

Molecular Weight: 157.21

Target: IGF-1R; AMPK; MMP; Mitophagy

Pathway: Protein Tyrosine Kinase/RTK; Epigenetics; PI3K/Akt/mTOR; Metabolic Enzyme/Protease; Autophagy

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year

SOLVENT & SOLUBILITY

In Vitro

H_2O : 50 mg/mL (318.05 mM; Need ultrasonic)
DMSO : < 1 mg/mL (insoluble or slightly soluble)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	6.3609 mL	31.8046 mL	63.6092 mL
	5 mM	1.2722 mL	6.3609 mL	12.7218 mL
	10 mM	0.6361 mL	3.1805 mL	6.3609 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 100 mg/mL (636.09 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Tranexamic acid (cyclocapron), a cyclic analog of lysine, is an orally active antifibrinolytic agent. Tranexamic acid attenuates the effects of severe trauma, inhibits urokinase plasminogen activator and ameliorates dry wrinkles. Tranexamic acid can used for the research of hemostasis [1][2][3][4][5].

IC_{50} & Target

MMP-1

In Vitro

Tranexamic acid (20-100 μg/mL, 24 h) attenuates the effects of severe trauma by enhancing mitochondrial respiration, suppressing damage-associated molecular patterns (DAMPs) release and improving capillary integrity in human umbilical vein endothelial cells (HUVECs) and human arterial endothelial cells (HAECs)[1].
Tranexamic acid (0.2-5 mM, 30 min) inhibits cell migration of MDA-MB-231 BAG breast cancer cells[2].

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

Cell Migration Assay [2]

Cell Line:	MDA-MB-231
Concentration:	0.2 mM, 1 mM, 5mM
Incubation Time:	30 min
Result:	Significantly inhibits cell migration with the inhibition of 26% ± 8.4% at 0.2 mM and 40% ± 4.2% at 1 mM.

In Vivo

Tranexamic acid (100 mg/kg, Intravenous injection, twice a day for 3-28 days) facilitates a more robust immune activation after traumatic brain injury in plasminogen-deficient mice[3].
Tranexamic acid (750 mg/kg, Oral, once a day for 20 consecutive days) decreases the proliferation of mast cells and increases the proliferation of fibroblasts, subsequently improving wrinkles caused by skin dryness in mice[4].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Traumatic brain injury (TBI) mice[3]
Dosage:	100 mg/kg
Administration:	Intravenous injection (i.v.)
Result:	Inhibited local plasmin formation and fibrinolysis. Impacts on the local immune response following TBI. Did not enhance reactivity of cervical lymph node (cLN) cells to central nervous system (CNS) antigens. Influences the cellular immune profile of peripheral lymph nodes. Reduced microglial and macrophage activation.

Animal Model:	Skin dryness induced wrinkles mice[4]
Dosage:	750 mg/kg
Administration:	Oral
Result:	Resulted in the amelioration of transepidermal water loss (TEWL) and moisture retention. Suppressed the generation of wrinkles. Inhibited plasma concentrations of adrenocorticotropic hormone (ACTH), corticosterone, and IgE. Suppressed proliferation of mast cells.

CUSTOMER VALIDATION

- bioRxiv. 2023 Feb 13, 528249.

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REFERENCES

[1]. Prudovsky I, et al. Tranexamic acid suppresses the release of mitochondrial DNA, protects the endothelial monolayer and enhances oxidative phosphorylation [J]. Journal of cellular physiology, 2019, 234(11): 19121-19129.

[2]. Wu G, et al. Tranexamic acid is an active site inhibitor of urokinase plasminogen activator [J]. Blood advances, 2019, 3(5): 729-733.

[3]. Draxler D F, et al. Tranexamic acid modulates the cellular immune profile after traumatic brain injury in mice without hyperfibrinolysis [J]. Journal of Thrombosis and Haemostasis, 2019, 17(12): 2174-2187.

[4]. Hiramoto K, et al. The amelioration effect of tranexamic acid in wrinkles induced by skin dryness [J]. Biomedicine & Pharmacotherapy, 2016, 80: 16-22.

[5]. Sindet-Pedersen S, et al. Hemostatic effect of tranexamic acid mouthwash in anticoagulant-treated patients undergoing oral surgery [J]. New England Journal of Medicine, 1989, 320(13): 840-843.

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