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SZABO-SCANDIC Handels GmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

Alteplase

Cat. No.:	HY-108865
CAS No.:	105857-23-6
Target:	Ser/Thr Protease
Pathway:	Metabolic Enzyme/Protease
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.

Alteplase

SOLVENT & SOLUBILITY

In Vitro	H ₂ O : ≥ 12.5 mg/mL * "≥" means soluble, but saturation unknown.
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BIOLOGICAL ACTIVITY

Description	Alteplase (Actilyse; Activase), a tissue plasminogen activator prepared by recombination, is a thrombolytic agent that play important roles in acute ischemic stroke, pulmonary embolism, acute myocardial infarction, and occluded catheters ^{[1][2][3][4]} .
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In Vitro	Alteplase (8.3 and 250 µg/mL, 12 h) shows a significant reduction in viability of human fetal retinal pigment epithelial (hfRPE cells)^[4]. Alteplase (8.3 and 250 µg/mL, 0-6 h) significantly decreases the transepithelial resistance in a time-dependent manner and induces cell death in hfRPE cells^[4]. Product Information This product contains L-arginine, phosphoric acid, polysorbate 80, etc. as auxiliary materials. It is suitable for the treatment of acute myocardial infarction, acute massive pulmonary embolism with unstable blood flow, and acute ischemic stroke.
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Instructions

The solution can be prepared with sterile water or normal saline (1 mg/mL).

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

Cell Viability Assay^[4]

Cell Line:	hfRPE cells
Concentration:	8.3 and 250 µg/mL
Incubation Time:	12 h
Result:	Decreased the number of cells that adhered to the cell culture dish, i.e., the number of living cells following treatment of hfRPE cells with 83 µg/ml alteplase for 12 h and 250 µg/ml alteplase for 6 and 12 h.

	Immunofluorescence ^[4]	
	Cell Line:	hfRPE cells
	Concentration:	8.3 and 250 µg/mL
	Incubation Time:	0-6 h
	Result:	Increased The number of positive hfRPE cells for both EthD-III and FITC-Annexin V staining.
In Vivo	Alteplase (0.9-10 mg/kg, i.v., 20 to 40 minutes post ictus or 180 and 240 minutes post ictus) is beneficial when given early after stroke onset (<3 hours) and not beneficial when the administration is delayed (≥3 hours) in mice model of thromboembolic stroke^[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.	
	Animal Model:	Mice model of thromboembolic stroke ^[3]
	Dosage:	0.9-10 mg/kg
	Administration:	i.v., 20 to 40 minutes post ictus or 180 and 240 minutes post ictus
	Result:	Significantly reduced the final infarct volume in the early stage.

REFERENCES

- [1]. J Bastecký, et al. [Actilyse (a recombinant tissue-type plasminogen activator) in the treatment of acute myocardial infarct. Comparison of the effects of Actilyse and streptokinase]. Vnitr Lek. 1994 May;40(5):293-8.
- [2]. Micieli G, et al. Safety and efficacy of alteplase in the treatment of acute ischemic stroke. Vasc Health Risk Manag. 2009;5(1):397-409.
- [3]. Orset C, et al. Efficacy of Alteplase in a Mouse Model of Acute Ischemic Stroke: A Retrospective Pooled Analysis. Stroke. 2016 May;47(5):1312-1318.
- [4]. Kimura S, et al. Cytotoxic effects of alteplase, a recombinant tissue plasminogen activator, on human retinal pigment epithelial cells. Jpn J Ophthalmol. 2021 Sep;65(5):731-739.

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

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA