

Alteplase

Cat. No.:	HY-108865
CAS No.:	105857-23-6
Target:	Others
Pathway:	Others
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.

Alteplase

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].																
In Vitro	<p>Alteplase (8.3 and 250 µg/mL, 12 h) shows a significant reduction in viability of human fetal retinal pigment epithelial (hfRPE cells)^[4].</p> <p>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].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Cell Viability Assay^[4]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>hfRPE cells</td> </tr> <tr> <td>Concentration:</td> <td>8.3 and 250 µg/mL</td> </tr> <tr> <td>Incubation Time:</td> <td>12 h</td> </tr> <tr> <td>Result:</td> <td>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.</td> </tr> </table> <p>Immunofluorescence^[4]</p> <table border="1"> <tr> <td>Cell Line:</td> <td>hfRPE cells</td> </tr> <tr> <td>Concentration:</td> <td>8.3 and 250 µg/mL</td> </tr> <tr> <td>Incubation Time:</td> <td>0-6 h</td> </tr> <tr> <td>Result:</td> <td>Increased The number of positive hfRPE cells for both EthD-III and FITC-Annexin V staining.</td> </tr> </table>	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.	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.
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In Vivo	<p>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].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>																

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

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