

## Enoxaparin

Cat. No.:	HY-109509
CAS No.:	679809-58-6
Target:	Factor Xa; Thrombin; SARS-CoV
Pathway:	Metabolic Enzyme/Protease; Anti-infection
Storage:	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)

# Enoxaparin

### BIOLOGICAL ACTIVITY

<b>Description</b>	Enoxaparin (PK 10169), a low-molecular-weight heparin (LMWH) derivative. Enoxaparin exerts anticoagulant activity through antithrombin III, an endogenous inhibitor of factor Xa and thrombin IIa. Enoxaparin protect the rat hippocampus against TBI (traumatic brain injury) via antioxidant and anti-inflammatory properties. Enoxaparin can be used for the research of deep vein thrombosis (DVT), pulmonary embolism, TBI and COVID-19 <sup>[1][2][3]</sup> .								
<b>In Vitro</b>	<p>Enoxaparin (0-70 µg/mL, 90 min) enhances AAT (alpha-1-antitrypsin) inhibition of both TMPRSS2 (Transmembrane Protease 2) activity and infection of hAEC (human airway epithelial cells) with HCoV-229E<sup>[1]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Cell Viability Assay<sup>[1]</sup></p> <table> <tr> <td>Cell Line:</td> <td>HEK293T TMPRSS2 cells, hAEC</td> </tr> <tr> <td>Concentration:</td> <td>0, 8.8, 35, 70 µg/mL</td> </tr> <tr> <td>Incubation Time:</td> <td>90 min</td> </tr> <tr> <td>Result:</td> <td>Significantly inhibited TMPRSS2 activity at the 90 min incubation period at 35 and 70 µg/mL, enhanced AAT inhibition of TMPRSS2 activity, and augmented AAT inhibition of HCoV-229E infection of hAEC.</td> </tr> </table>	Cell Line:	HEK293T TMPRSS2 cells, hAEC	Concentration:	0, 8.8, 35, 70 µg/mL	Incubation Time:	90 min	Result:	Significantly inhibited TMPRSS2 activity at the 90 min incubation period at 35 and 70 µg/mL, enhanced AAT inhibition of TMPRSS2 activity, and augmented AAT inhibition of HCoV-229E infection of hAEC.
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<b>In Vivo</b>	<p>Enoxaparin (1 mg/kg; SC; once every 6 h for 8 times) reduces oxidative damage, inflammation and astrocytosis following TBI (traumatic brain injury) in the rat<sup>[2]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table> <tr> <td>Animal Model:</td> <td>Adult male Wistar rats (350-450 g, TBI-treated)<sup>[2]</sup></td> </tr> <tr> <td>Dosage:</td> <td>0 mg/kg, 1 mg/kg</td> </tr> <tr> <td>Administration:</td> <td>SC, once every 6 h, starting at 1 h, and finishing at 43 h after the TBI induction.</td> </tr> <tr> <td>Result:</td> <td>Significantly decreased the hippocampal TBARS and oxidized protein levels, COX-2 overexpression and reactive gliosis, but it did not influence the SOD and GSH-Px activities, pro-IL-1β and active caspase-3 overexpressions as well as neurodegeneration following</td> </tr> </table>	Animal Model:	Adult male Wistar rats (350-450 g, TBI-treated) <sup>[2]</sup>	Dosage:	0 mg/kg, 1 mg/kg	Administration:	SC, once every 6 h, starting at 1 h, and finishing at 43 h after the TBI induction.	Result:	Significantly decreased the hippocampal TBARS and oxidized protein levels, COX-2 overexpression and reactive gliosis, but it did not influence the SOD and GSH-Px activities, pro-IL-1β and active caspase-3 overexpressions as well as neurodegeneration following
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TBI. Reduce oxidative damage, inflammation and astrogliosis following TBI in the rat.

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## REFERENCES

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- [1]. Bai X, et al. Enoxaparin augments alpha-1-antitrypsin inhibition of TMPRSS2, a promising drug combination against COVID-19. *Sci Rep.* 2022 Mar 25;12(1):5207.
- [2]. Župan Ž, et al. Effects of enoxaparin in the rat hippocampus following traumatic brain injury. *Prog Neuropsychopharmacol Biol Psychiatry.* 2011 Dec 1;35(8):1846-56.
- [3]. Lee S, Gibson CM. Enoxaparin in acute coronary syndromes. *Expert Rev Cardiovasc Ther.* 2007 May;5(3):387-99.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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