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Extended Abstract

1,2,3-triazole-oxazolidinone Derivatives as Inhibitors of the Plasminogen System †

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The Plasminogen system is known for being responsible for clot dissolution through fibrin degradation. The inactive zymogen plasminogen is activated by t-PA or u-PA to form the active plasmin, which exerts the proteolytic activity to degrade fibrin, as well as other ECM proteins.

High throughput screening methods have led to the discovery of a new family of antifibrinolytic drugs, based on derivatives of substituted 1,2,3-triazole-oxazolidinones. Of the 13 different molecules successfully synthesized, two showed high inhibition activity in coagulation in vitro tests.

Specific in vitro assays have been used to study t-PA and Plasmin activities separately. Results suggest a simultaneous inhibition of both t-PA and plasmin. The inhibition mechanisms for each target have been proposed after studying the binding interactions through docking computational analysis.

These findings open the door to further explore this family of compounds as therapeutic candidates to prevent extreme blood loss during certain types of surgery, severe menstruations, and other bleeding related conditions.