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## Product Data Sheet

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Product Name: Prothrombin (474-477) [Mus musculus]

Cat. No.: GP10053

### Chemical Properties

Cas. No.

SMILES OC1=CC=C(C[C@H](N)C(N[C@@H]([C@H](C)CC)C(NC(CC2=CNC=N2)C(N3CCC[C@]3([H])C(O)=O)=O)=O)=O)C=C1

Formula	C <sub>26</sub> H <sub>36</sub> N <sub>6</sub> O <sub>6</sub>	M.Wt	528.6
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Solubility	≥ 52.9mg/mL in DMSO	Storage	Store at -20°C
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General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure 

### Background

**Prothrombin** (coagulation factor II) (H<sub>2</sub>N-Tyr-Ile-His-Pro-OH) is produced in the liver and is post-translationally modified in a vitamin K-dependent reaction that converts ten glutamic acids on prothrombin into gamma-carboxyglutamic acid (Gla).

Prothrombin is proteolytically cleaved to form thrombin in the coagulation cascade, which ultimately results in the stemming of blood loss. Thrombin in turn acts as a serine protease that converts soluble fibrinogen into insoluble strands of fibrin, as well as catalyzing many other coagulation-related reactions. [1]

Activation of prothrombin is crucial in physiological and pathological coagulation. Various rare diseases involving prothrombin have been described (e.g., hypoprothrombinemia). Anti-prothrombin antibodies in autoimmune disease may be a factor in the formation of the lupus anticoagulant, also known as antiphospholipid syndrome. Hyperprothrombinemia can be caused by the G20210A mutation. Thus, manipulation of prothrombin is central to the mode of action of most anticoagulants.

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

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### References:

1. Royle NJ, Irwin DM, Koschinsky ML, MacGillivray RT, Hamerton JL (May 1987). "Human genes encoding prothrombin and ceruloplasmin map to 11p11-q12 and 3q21-24, respectively". Somat. Cell Mol. Genet. 13 (3): 285-92.

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