

## Thrombin from bovine plasma

### Description:

The predominant form of thrombin *in vivo* is its zymogen, prothrombin (factor II), which is produced in the liver. Prothrombin is cleaved *in vivo* by activated factor X releasing the activation peptide and cleaving thrombin into light and heavy chains yielding catalytically active  $\alpha$ -thrombin.  $\alpha$ -Thrombin is composed of a light chain (A chain)(MW ~ 6,000) and a heavy chain (B chain)(~31,000). These two chains are joined by one disulfide bond.

### Application:

Thrombin is an endolytic serine protease that selectively cleaves the Arg--Gly bonds of fibrinogen to form fibrin and release fibrinopeptides A and B. Thrombin is used for site specific cleavage of recombinant fusion proteins containing an accessible thrombin recognition site for removal of affinity tags. Thrombin also activates factor XI. Factor XIII. As part of its activity in the coagulation cascade, thrombin also promotes platelet activation and aggregation via activation of protease-activated receptors on the cell membrane of the platelet.

**Activity:** > 10 NIH units/mg.

**Storage and form:** -20 °C (Lyophilized powder).

**Package size:** Bulk .

### Reference:

1. R. Biggs, ed. Human Blood Coagulation, Haemostasis and Thrombosis 2nd ed., Philadelphia , (1976), 722.
2. Chang, J.Y., Eur. J. Biochem., 151, 217-224 (1985).
3. Enzyme Nomenclature: EC 3.4.21.5.
4. Merck 13,9461.