

## UROKINASE

### Description:

Urokinase also called urokinase-type plasminogen activator (uPA), is a serine protease (EC 3.4.21.73). Urokinase was originally isolated from human urine, but is present in several physiological locations, such as blood stream and the extracellular matrix. The primary physiological substrate is plasminogen, which is an inactive zymogen form of the serine protease plasmin. Activation of plasmin triggers a proteolysis cascade that, depending on the physiological environment, participates in thrombolysis or extracellular matrix degradation.

### Application:

- For the lysis of acute massive pulmonary emboli, defined as obstruction of blood flow to a lobe or multiple segments.
- For the lysis of pulmonary emboli accompanied by unstable hemodynamics, i.e., failure to maintain blood pressure without supportive measures.

**MW:** HMW Form ~ 50,000 Daltons, LMW form ~30,000 Daltons

### Unit Definition:

The unit of urokinase referred to as CTA (Committee on Thrombolytic Agents) unit measures its ability to split the synthetic substrate N-acetyl L-lysine methyl ester (ALME). One unit of urokinase activity releases  $5 \times 10^{-4}$  micromoles/ CTA unit per minute at 37°C.

The activities are normally measured against IP/BP reference standards for defining the number of units present.

### Available form:

Lyophilized powder confirming to BP/IP specifications

### Solubility:

Freely soluble in water.

### Stability and Storage:

Stable for 3 years at 2-8°C in sealed tamper proof containers.

### Reference:

1. Am. J. Physiol, 171, 768, (1952).
2. Science, 147, 880 (1965).
3. J. Biochem, 90, 225, (1981).