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### **L-Asparaginase ENZYME**

**Catalog Number:** PRP-287ENZ  
**Quantity:** 500 IU, 2500 IU, 10000 IU  
**Format:** Sterile-filtered white lyophilized (freeze-dried) powder  
**Host:** *E. coli*

#### **Background:**

L-asparaginase is an enzyme that depletes L-asparagine, an important nutrient for cancer cells, resulting in cancer/tumor cell starvation. It is used mainly for the induction of remission in acute lymphoblastic leukemia. L-asparagine is an essential amino acid for the cell metabolism of lymph node-derived malignant B cells in multiple myeloma.

The rationale behind the use of asparaginase is that it takes advantage of the fact that acute lymphoblastic leukemia cells are unable to synthesize asparagine while normal cells can. The leukemic cells depend on circulating asparagine. Asparaginase catalyzes the conversion of L-asparagine to aspartic acid and ammonia, depriving the leukemic cells of this non-essential amino acid.

#### **Specificity and Preparation:**

L-asparaginase is expressed in *E. coli*. It is a 303-amino acid protein with a molecular weight of 31.7 kDa. The enzyme was lyophilized with no additives. Purity is greater than 96.0% as determined by RP-HPLC and SDS-PAGE.

#### **Usage and Storage:**

One unit of enzyme catalyzes hydrolyzation of 10 nM of dUTP to dUMP in one hour at 85°C. One IU of L-Asparaginase is defined as that amount of enzyme required to generate 1  $\mu$ mol of ammonia per minute at pH 7.3 and 37°C. Specific Activity: 225 IU/mg  
Enzyme is stable two years when stored at -20°C or two weeks stored at 4°C. Gently spin down material before use; 5-10 seconds in a microfuge should be adequate.

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