Asparaginase (DB00023)

Name: Asparaginase
Accession Number: DB00023 (BIOD00011, BTD00011)
Type: biotech
Groups: approved
Description: L-asparagine amidohydrolase from E. coli
DrugBank Asparaginase (DB00023)

Protein chemical formula
\[ C_{1377}H_{2208}N_{382}O_{442}S_{17} \]
Protein average weight 31731.9000

Sequences

FASTA

Synonyms
L-asparagine amidohydrolase
Putative L-asparaginase precursor

Salts Not Available

Brand names
Elspar (Merck & Co. Inc)

Brand mixtures Not Available

Categories
• Antineoplastic Agents

CAS number 9015-68-3

Taxonomy

Kingdom Organic

Classes • Polypeptides

Substructures • Polypeptides

Pharmacology

Indication
For treatment of acute lymphocytic leukemia and non-Hodgkins lymphoma

In a significant number of patients with acute leukemia, the malignant cells are dependent on an exogenous source of asparagine for survival. Normal cells, however, are able to synthesize asparagine and thus are affected less by the rapid depletion produced by treatment with the enzyme asparaginase. Elspar exploits a metabolic defect in asparagine synthesis of some malignant cells.

Mechanism of action
Asparaginase converts asparagine to aspartic acid and ammonia. It facilitates production of oxaloacetate which is needed for general cellular metabolism. Some malignant cells lose the ability to produce asparagine and so the loss of exogenous sources of asparagine leads to cell death.

Absorption Not Available

Volume of distribution Not Available

Protein binding Not Available

Metabolism Not Available

Route of elimination Not Available

Half life 8-30 hrs

Clearance Not Available

Toxicity Not Available

Affected organisms • Humans and other mammals

Pathways Not Available

Pharmacoeconomics

Manufacturers Not Available

• Lundbeck Inc.
Packagers
- Merck & Co.
- Prescript Pharmaceuticals

Dosage forms
- Powder, for solution
  Form: Powder, for solution
  Route: Intramuscular

Prices
- Elspar 10000 unit vial 74.6 USD vial

DrugBank does not sell nor buy drugs. Pricing information is supplied for informational purposes only.

Patents
- Not Available

Properties
- Experimental Properties
  - Property: hydrophobicity
    - Value: 0.059
    - Source: Not Available
  - Property: isoelectric point
    - Value: 4.67
    - Source: Not Available

References

Interactions
- Drug Interactions
  - Drug: Trastuzumab
    - Interaction: Trastuzumab may increase the risk of neutropenia and anemia. Monitor closely for signs and symptoms of adverse events.

Targets
1. Asparagine

Pharmacological action: yes
Actions: other/unknown

References: