PRODUCT INFORMATION

Marimastat
Item No. 14869

CAS Registry No.: 154039-60-8
Formal Name: (2S,3R)-N^4-[(1S)-2,2-dimethyl-1-[(methylamino)carbonyl]propyl]-N^1,2-dihydroxy-3-(2-methylpropyl)-butanediamide
Synonyms: BB-2516, KB-R8898
MF: C_{15}H_{29}N_3O_5
FW: 331.4
Purity: ≥98%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥2 years

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Marimastat is supplied as a crystalline solid. A stock solution may be made by dissolving the marimastat in the solvent of choice. Marimastat is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of marimastat in ethanol is approximately 2 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Description

Marimastat is a broad-spectrum matrix metalloproteinase (MMP) inhibitor (IC_{50}s = 5, 6, 230, 16, and 3 nM for MMP-1, MMP-2, MMP-3, MMP-7, and MMP-9, respectively). It also binds to a recombinantly expressed catalytic domain of human MMP-14 (MMP-14\text{cat}; K_i = 2.1 nM) and inhibits gelatinases (IC_{50} = 3–6 nM), fibroblast collagenase (IC_{50} = 5 nM), and matrylsin (IC_{50} = 16 nM). It inhibits peritoneal dissemination of implanted human gastric carcinoma TMK-1 cells in nude mice (18 mg/kg per day) but does not affect TMK-1 viability in vitro, providing only 2.64% inhibition when used at a concentration of 10 μM. Marimastat inhibits lymph node metastasis in an oral squamous cell carcinoma (OSCC) OSC-19 mouse xenograft model (30 mg/kg per day). It also delays tumor growth of human head and neck squamous cell SCC-1 xenografts in nude mice alone and when combined with chemoradiation when administered at a dose of 8.7 mg/kg per day. Marimastat is an inhibitor of tumor necrosis factor alpha (TNF-α) convertase (TACE), which catalyzes pro-TNF-α conversion into TNF-α (IC_{50}s = 3.8 and 7,000 nM for purified TACE and whole blood, respectively).

References