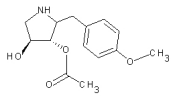

Formula: C14H19NO4

MW: 265.31

CAS: 22862-76-6

MDL: MFCD06668135

TNP: TNP00269

2-((4-methoxyphenyl)methyl)-,3-acetate,(2r-(2-alpha,3-4-pyrrolidinediol; 2-(p-methoxybenzyl)-,3-acetate,(2s,3r,4r)-4-pyrrolidinediol; 4-beta))-alph; antibioticpa-106; ANISOMYCIN; ANISOMYCIN, STREPTOMYCES GRISEOLUS; FLAGECIDIN; (2R,3S,4S)-2-(4-METHOXYBENZYL)-3,4-

LogP: 0.46

LogS:

Acceptors: 4

Donors: 2

Rotation Bonds: 2

Chiral Centers: 3

N+O: 5

LIPINSKY: 4

IUPAC: (3S,4S)-4-hydroxy-2-[(4-methoxyphenyl)methyl]pyrrolidin-3-yl acetate

Smiles: COc1ccc(CC2[C@H](OC(=O)C)[C@H](CN2)O)cc1

THERAPEUTIC CATEGORY: Antiprotozoal (Trichomonas)

REFERENCE: Reference Alberts, B., et al., Basic genetic mechanisms in molecular biology of the cell. Cell 3rd ed., New York, NY , 240, (1994) Faris, M., et al., The c-Jun N-terminal kinase cascade plays a role in stress-induced apoptosis in Jurkat cells by up-regulating Fas ligand expression. J. Immunol. 160, 134-144, (1998) abstract Polverino, A.J., Patterson, S.D., Selective activation of caspases during apoptotic induction in HL-60 cells. Effects of a tetrapeptide inhibitor. J. Biol. Chem. 272, 7013, (1997) abstract Zechner, D., et al., MKK6 activates myocardial cell NF-kappaB and inbibits apoptosis in a p38 mitogen-activated protein kinase-dependent manner. J. Biol. Chem. 273, 8232-8239, (1998) abstract Barros, L.F., et al., Evidence of two mechanisms for the activation of the glucose transporter GLUT1 by anisomycin: p38(MAP kinase) activation and protein synthesis inhibition in mammalian cells. J. Physiol. 504, 517-525, (1997) abstract Hoffman, M.E., et al., Inhibition of protein synthesis and amino acid transport by crystal violet in Trypanosoma cruz. J. Eukaryot. Microbiol. 42, 293-297, (1995) abstract Barancik, M., et al., Okadaic acid and anisomycin are protective and stimulate the SAPK/JNK pathway. J. Cardiovasc. Pharmacol. 34, 182-190, (1999) abstract Liao, J., et al., Stress apoptosis and mitosis induce phosphorylation of human keratin 8 at Ser-73 in tissues and cultured cells. J. Biol. Chem. 272, 17565, (1997) abstract Merck Merck 13,673 Beilstein Beil. 21,V,5,523

SOURCE: Antibiotic isolated from Streptomyces griseolus

ACTIVITY: Antibiotic isolated from Streptomyces griseolus that inhibits protein synthesis. Acts by inhibiting peptidyl transferase activity in eukaryote ribosomes. Reported to induce apoptosis in a variety of cells including promyelocytic leukemia cells, Jurkat cells, ventricular myocytes, and colon adenocarcinoma cells. Initiates intracellular signals and immediate early gene induction. Selective signaling agonist. Potent Jun-NH2 terminal kinase (JNK) agonist. Activates mitogen-activated protein (MAP) kinases (JNK/SAPK and p38/RK). Antiprotozoal agent.

Specification: Antibiotics; Protein Kinase ANISOMYCIN Chemical Properties:

mp 140-141 C storage temp. 2-8C solubility methanol: 20 mg/mL, clear, colorless to faintly yellow form solid color white Stability:Stable. Incompatible with strong oxidizing agents. Safety Information Hazard Codes T,Xn Risk Statements 25-36/37/38-20/21/22 Safety Statements 45-36-26 RIDADR UN 3462 6.1/PG 3 WGK Germany 3 RTECS BZ9800000 F 3-10 HazardClass 6.1(b) PackingGroup III ANISOMYCIN Usage And Synthesis Chemical Properties:

Crystalline Biological ActivityProtein synthesis inhibitor (blocks translation). Potent activator of stress-activated protein kinases (JNK/SAPK) and p38 MAP kinase. Acts as a potent signaling agonist to selectively elicit homologous desensitization of immediate early gene induction (c-fos, fosB, c-jun, junB and junD). ANISOMYCIN

Merck 13 Reference: Monograph Number: 0000673

Title: Anisomycin

CAS Registry Number: 22862-76-6

CAS Name: (2R,3S,4S)-2-[(4-Methoxyphenyl)methyl]-3,4-pyrrolidinediol 3-acetate

Additional Names: [2R-(2a,3a,4b)]-2-[(4-methoxyphenyl)methyl]-3,4-pyrrolidinediol 3-acetate; 2-p-methoxyphenylmethyl-3-acetoxy-4-hydroxypyrrolidine; 1,4,5-trideoxy-1,4-imino-5-(4-methoxyphenyl)-D-xylo-pentitol 3-acetate

Trademarks: Flagecidin (Pfizer)

Molecular Formula: C14H19NO4

Molecular Weight: 265.30.

Percent Composition: C 63.38%, H 7.22%, N 5.28%, O 24.12%

Literature References: Protein synthesis inhibiting antibiotic isolated from Streptomyces griseolus and S. roseochromogenes: Sobin, Tanner, Jr., J. Am. Chem. Soc. 76, 4053 (1954); Tanner et al., US 2691618 (1954 to Pfizer). Activity: J. E. Lynch et al., Antibiot. Chemother. 4, 844, 899 (1954). Structure and stereochemistry: Beereboom et al., J. Org. Chem. 30, 2334 (1965); Schaefer, Wheatley, ibid. 33, 166 (1968); Butler, ibid. 2136. Biosynthesis: Butler, ibid. 31, 317 (1966). Total synthesis: Oida, Ohki, Chem. Pharm. Bull. 16, 2086 (1968); ibid. 17, 1405 (1969); Felner, Schenker, Helv. Chim. Acta 53, 754 (1970). Chiral synthesis: J. P. H. Verheyden et al., Pure Appl. Chem. 50, 1363 (1978). Stereospecific total synthesis: D. P. Schumacher, S. S. Hall, J. Am. Chem. Soc. 104, 6076 (1982). Mechanism of action: A. Jim