Bioorg Med Chem. 2001 Apr;9(4):931-8.

Amide and ester derivatives of N3-(4-methoxyfumaroyl)-(S)-2,3-diaminopropanoic acid: the selective inhibitor of glucosamine-6-phosphate synthase.

Zgódka D, Jedrzejczak R, Milewski S, Borowski E.

Department of Pharmaceutical Technology and Biochemistry, Technical University of Gdañsk, Poland. dzgodka@altis.chem.pg.gda.pl

Abstract

Several amide and ester derivatives of a glutamine analogue, N3-(4-methoxyfumaroyl)-(S)-2,3-diaminopropanoic acid (FMDP) (1-8), were synthesized and evaluated for the inhibitory activity in regard to glucosamine-6-phosphate synthase from Candida albicans. The syntheses were accomplished by the reaction of N2-tert-butoxycarbonyl-N3-(4-methoxyfumaroyl)-(S)-2,3-diaminopropanoic acid (BocFMDP) with the corresponding amines to give the FMDP amides (1-4) or with alkyl halides to give corresponding esters of FMDP (5-8). Among the synthesized compounds, the acetoxymethyl ester of FMDP was the most active inhibitor of the enzyme. Its IC50 value compared to that of FMDP (4 microM) was equal to 11.5 microM. The methyl and allyl esters and the N-hexyl-N-methyl-amide of FMDP exhibited a moderate enzyme inhibitory activity.

PMID: 11354676 [PubMed - indexed for MEDLINE]