

Synthesis of amino acids and peptide containing adamantane fragment. Antiviral activity against influenza H1N1.

© Pyotr P. Purygin,⁺* Evgeniy A. Stepanov, and Oksana D. Lachugina

Chair of Organic, Bioorganic and Medical Chemistry, Samara State University.

Akad. Pavlova St., 1. Samara, 443011. Samara Region. Russia.

Phone: +7 (846) 334-54-59. E-mail: puryginpp2002@mail.ru

*Supervising author; ⁺Corresponding author

Keywords: *amino acids, peptides, adamantane, anti-virus activity, computer calculation of biological activity, H1N1 virus.*

Abstract

Two amino acids and one peptide, modified with adamantane on the following functional groups: Ad-CH₂-CO-D-norLeu-OH, Ad-CH₂-CO-NH-(CH₂)₅-COOH, Ad (CH₂-CO-VVP-NH-Ad)₂ are synthesized. Amino acids have an identical gross formula, but a various structure. The peptide contains adamantane central residue to which by 1,3-positions two peptide residues modified with 1-aminoadamantyl fragment on the carboxyl C-functional group are attached. Software-based evaluation of acquired compounds applying Pass Professional and real examination of antiviral activity of (influenza A virus, the strain (A/IIV-Moscow/01/2009(H1N1)sw1) has been implemented. Search for conformers in global energy minimum has been made and conformations and hydrogen bonds analysis has been conducted.