

February 19-20, 2019  
Prague, Czech Republic

Srđanka Tomić et al., J Org Inorg Chem 2019, Volume: 5  
DOI: 10.21767/2472-1123-C1-021

## SYNTHESIS AND IMMUNOSTIMULATING ACTIVITY OF NOVEL MANNOSYLATED DESMURAMYL PEPTIDES

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**P**eptidoglycan fragments of well-defined structures, the best known of which are muramyl peptides, have been extensively studied as possible adjuvants for human and animal vaccines. Muramyl dipeptide (MDP, *N*-acetylmuramyl-L-alanyl-D-isoglutamine) is known as the smallest synthetic adjuvant molecule capable of replacing whole *Mycobacteria* in Freund's adjuvant. Mannose receptors (MR), present on immunocompetent cells (such as macrophages and dendritic cells) are considered to be pattern-recognition receptors binding compounds with mannose, *N*-acetylglucosamine or fucose as their essential parts. Therefore, they are responsible for the binding, among others, of mannosylated antigens or relevant biologically active molecules containing mannose, thus affecting the immune reactions. Up to now, our research in the field of potential adjuvants was directed towards desmuramyl peptides which contain adamantylglycine and mannosylated adamantylglycine moieties bound to the essential part of MDP, L-Ala-D-*iso*Gln. Here, we present synthesis and biological evaluation of novel mannosylated desmuramyl peptides containing glycolyl linker. Investigation of their immunostimulating activity was conducted *in vivo* in mouse model using ovalbumin as an antigen. Synthesized glycopeptides showed improved immunological activity than previously described mannosylated desmuramyl peptides with (R)-hydroxyisobutyl linker.

### Biography

Srđanka Tomić has graduated Chemistry in 1974 at the Faculty of Science, University of Zagreb; PhD in Chemistry was obtained in 1978 at the Department of Chemistry and Biochemistry, Southern Illinois University, USA. She has professional experience as: an Assistant, Faculty of Science, University of Zagreb, (1974/75); Research Assistant, Southern Illinois University (1975-1978); Research Assistant, "Ruder Bošković" Institute (1978-1984), Zagreb; an Associate Researcher, Institute of Immunology, Zagreb (1984-1993); an Associate Professor (1984-1993) and Full Professor (2003-), Department of Chemistry, Faculty of Science, University of Zagreb. From 1995-2005, she was the Head of the Division of Organic Chemistry and from 2007-2011, the Head of the Department of Chemistry at the Faculty of Science, University of Zagreb. From 2012-2014, she was a Vice Dean for research and graduate studies at the Faculty of Science, University of Zagreb. Major research interests are in the field of Organic Synthesis of Bioactive Compounds. She published over 70 scientific papers.

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