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Cornu aspersum-derived peptides with biological activity

R Abrashev[1], E Krumova[1], A Dolashki[2], N Kostadinova[1], J Miteva-Staleva[1], L Velkova[2], B Spasova[1], M Angelova[1] and **P Dolashka[2]**
[1]The Stephan Angeloff Institute of Microbiology-Bulgarian Academy of Sciences, Bulgaria
[2]Institute of Organic Chemistry with Centrum of Phytochemistry-Bulgarian Academy of Sciences, Bulgaria

Recently, bioactive peptides have received close scientific attention for their broad scope of bioactivities, mainly including antioxidant and antimicrobial properties. Such peptides are especially prominent for their notable contributions to human health improvement through the scavenging of dangerous free radicals. Moreover, they have shown to be good candidates for the development of alternative antimicrobial agents. The aim of the present study was to derive different fractions from the mucus of the garden snail *Cornu aspersum* and to evaluate their antioxidation and antifungal activity. The snails, *Cornu aspersum* were collected in Bulgaria and the mucus was purified. After that, the fractions with different molecular mass were obtained by ultrafiltration on Millipore filters. Mass spectrometry analyses on an LTQ Orbitrap XL mass spectrometer (Thermo Fisher Scientific, Bremen, Germany) equipped with a nanoelectron spray ion source was performed for the peptide characterization. The total antioxidant potential of the tested fractions was assessed by the DPPH and ABTS radical scavenging activity methods and the nitroblue tetrazolium (NBT) reduction assay; superoxide dismutase (SOD) activity was evaluated as well. The results showed that the natural peptides derived from *C. aspersum*, specifically the low molecular mass fractions possess potential antioxidant activity confirmed by hydroxyl and superoxide radical scavenging activity and radical cation decolorization assay. These peptides exhibited fungicidal and fungistatic activity against *Candida membranifaciens, Aspergillus fumigatus* and *Aspergillus niger*.

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Biography

Radoslav Abrashev is an Associate Professor in the Department of Mycology at The Stephan Angeloff Institute of Microbiology (IMicB), Bulgarian Academy of Sciences. He has completed his PhD from IMicB and Post-doctorate from the University of Strathclyde, Glasgow, UK. He has published more than 30 papers in reputed journals. His research interest is focused on production of biological active compounds from natural sources, their purification, chemical and biological characterization in terms of antioxidant and antifungal properties.

rabrashev@abv.bg

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