

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/319903298>

The Radical Scavenging Activity of *Ajuga genevensis* L. in Vitro culture

Conference Paper · September 2017

CITATIONS

0

READS

35

3 authors:



[Naira Sahakyan](#)

Yerevan State University

19 PUBLICATIONS 11 CITATIONS

[SEE PROFILE](#)



[Margarit Petrosyan](#)

Yerevan State University

26 PUBLICATIONS 29 CITATIONS

[SEE PROFILE](#)



[Armen Trchounian](#)

Yerevan State University

480 PUBLICATIONS 2,743 CITATIONS

[SEE PROFILE](#)

Some of the authors of this publication are also working on these related projects:



New approach of carbon containing end products and wastes utilization: hydrogen production by pure and mixed cultures of dark- and photo-fermentative bacteria [View project](#)



antibacterial and antioxidant activity of plant and their in vitro culture extracts [View project](#)

All content following this page was uploaded by [Naira Sahakyan](#) on 19 September 2017.

The user has requested enhancement of the downloaded file.

NutRedOx COST Action CA16112 & Postgraduate Training Network "NutriOx" 2017
Strasbourg, 27 – 29 September 2017
P19

The Radical Scavenging Activity of *Ajuga genevensis* L. *In Vitro* Culture

Sahakyan N., Petrosyan M., Trchounian A.

Department of Biochemistry, Microbiology and Biotechnology, Biology Faculty, Yerevan State University, 1 A.
Manoogian Str., 0025 Yerevan, Armenia

Since the 1970s, oxidative stress has been evoked as a contributor to pathogenesis and thousands of studies have reported protective or therapeutic benefits of antioxidants in cellular and animal models of age related diseases. It is believed that two-third of the world's plant species have medicinal importance, and almost all of them have antioxidant potential. Armenian flora is very rich of many plants which can be used in traditional and modern medicine, food, cosmetics. Genus *Ajuga* includes over 50 species among which 4 species grow in Armenia. *A. genevensis* is of great interest for pharmacology due to its high biological activity. But a great number of plants are considered to be endangered, scarce or included in Red books, therefore biotechnological methods of obtaining of valuable metabolites are also of interest. The aim of our investigation was to study the dependence of radical scavenging activity of *A. genevensis* callus culture extraction conditions and growing phase.

The *A. genevensis* callus culture was obtained and the further growth was supported on Murasige-Skoog (MS) nutrient medium, which contained 2 mg/l indole-3-acetic acid and 0.2 mg/l kinetine. The antiradical activity of callus extracts (ethanol, methanol, acetone (propanone), water, chlorophorm) was tested using DPPH-assay (2,2-diphenyl-1-picrylhydrazyl) and photochemiluminescent method. The water, methanol, acetone and chlorophorm extracts of 30th sub-cultivation callus cultures possess the ability to neutralize the DPPH free radicals, whereas 45th sub-cultivation cultures did not show any activity. The highest antiradical activity possesses the water extract. During the cultivation some quantitative and qualitative changes may occur in callus metabolism. This makes significant bases to study the metabolic features of plant cultures with medicinal purposes. Our investigations show that the prolonged cultivation of *A. genevensis* callus culture leads to inactivation of the synthesis of substances with antioxidant activity.

Keywords: *Ajuga genevensis*, antioxidant activity, callus culture