



HP-12 : Evaluation of antioxidant activity of *Aspergillus* genus' three fungal species producing bioactive metabolites

BRAMKI Amina^{1*}, LATIFI Rym¹, SALAHOUALI Aya¹, BENSOUICI Chawki², GHORRI Sana³.

¹ National Superior School of Biotechnology. Constantine. Algeria.

² Biotechnology Research Center. Constantine. Algeria.

³ University of Mentouri Brothers-Constantine. Algeria.

Email*: br_amina@yahoo.fr

Subject description: *Aspergillus* are a valuable source of therapeutically active compounds. Thus, the activities of various species of this genus deserve to be studied in order to establish other more potent fungal substances that can be reliable therapies for humans.

Objectives: This work aims to evaluate the antioxidant activity of three fungal species of the *Aspergillus* genus.

Methods: Fungal strains (*A. quadrilineatus*, *A. niveus* and *A. wentii*) were seeded on Czapek-dox medium, after 14 days of fermentation, the extraction of metabolites was carried out by chloroform, then the fungal extracts were tested for their antioxidant activity according to four methods: the trapping of the free radical DPPH, the trapping of the radical ABTS, the reduction by the formation of the ferrous complex Fe^{2+} phenanthroline and the power of reduction of ferric ions (FRAP).

Results and discussion: The combination of the different procedures showed that the extract of *A. wentii* has the most important antioxidant activity with 83% trapping effect on DPPH radicals. Trapping of the ABTS radical by the same extract showed inhibition of 90% of the radicals. It also showed an absorbance of 1.36% of ferrous ion chelation. In addition, the three extracts are able to reduce iron and form the Fe^{+2} -phenanthroline complex. However, all species showed low ferric ion reduction activity based on the FRAP test.

Conclusion: This work shows the ability of the three fungal strains to produce bioactive molecules that have antioxidant activity, whose most significant effect is revealed by the species *A. wentii* which is due to its richness in phenolic compounds commonly known for their antioxidant properties.

Keywords: *Aspergillus*, secondary metabolites, antioxidant activity.