

Patrizia Cesaro

Curriculum vitae

BIO AND EDUCATION

Patrizia Cesaro has a researcher position at the Università del Piemonte Orientale "Amedeo Avogadro", Department of Scienze ed Innovazione Tecnologica. She graduated *cum laude* in Biological Sciences at the University of Torino on 1997, she received a Specialization in Biotechnology Application with the evaluation of 70/70 cum Laude and the Professional Abilitation as Biologist at the University of Torino and finally she received PhD in "Environmental Science, internal waters and agroecosystems," on 2005 at the University of Piemonte Orientale "A. Avogadro".

UNIVERSITY CAREER

2015- today	Researcher, Università del Piemonte Orientale
2010-2015	Post Doc position, Università Piemonte Orientale
2006-2014	University professor contract, Università del Piemonte Orientale
2005-2010	Assegnista di ricerca, Università Piemonte Orientale

UNIVERSITY POSITIONS

2005	'Cultore della materia' in Recombinant Technologies
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MAIN FIELDS OF INTEREST

1. Arbuscular mycorrhizal fungi
2. Molecular biology and proteomics
3. Phytoremediation and bioremediation
4. Plant-bacteria interaction
5. Biodiversity
6. Heavy metals and arsenic

CURRENT ISSUES OF RESEARCH

1. **Molecular characterization of bacterial and AM fungi arbuscular mycorrhizal fungi communities in agricultural soils and heavy metals polluted soils**

Arbuscular mycorrhizal fungi and bacteria communities of agricultural land or polluted by heavy metals have been characterized, using 28S rDNA and 18S rDNA sequences, following two approaches: 1) molecular methods that include the use of PCR and cloning techniques; 2) next

generation sequencing (NGS), a highly innovative strategy, which greatly expand (a highest number of sequences) results.

2. Optimization of new high -performance enzymes for bioethanol production

Studies by mutagenesis of gene encoding different cellulase in order to improve the enzymatic hydrolysis of lignocellulosic biomass.

3. Arsenic phytoremediation by *Pteris vittata* As hyperaccumulator plant

Study of arsenic effects, in *Pteris vittata* plants, modulated by the presence/absence of arbuscular mycorrhizal fungi by proteomic analysis and gene expression .

TOP FIVE PAPERS

1. **Cesaro P.**, Cattaneo C., Bona E., Berta G., Cavaletto M. The arsenic hyperaccumulating *Pteris vittata* expresses two arsenate reductases. Scientific Reports. 5: 14525 (2015). DOI: 10.1038/srep14525. Categoria MULTIDISCIPLINARY SCIENCES.
2. Gamalero E., **Cesaro P.**, Cicatelli A., Todeschini V., Musso C., Castiglione S., Fabiani A., Lingua G. Poplar clones of different sizes, grown on a heavy metal polluted site, are associated with microbial populations of varying composition. Science of the Total Environment. 425:262-270 (2012). Categoria ENVIRONMENTAL SCIENCES.
3. Bona E., Cattaneo C., **Cesaro P.**, Marsano F., Lingua G., Cavaletto M., Berta G. Proteomic analysis of *Pteris vittata* fronds: two arbuscular mycorrhizal fungi differentially modulate protein expression under arsenic contamination. Proteomics 10:3811-3834 (2010). Categoria BIOCHEMISTRY & MOLECULAR BIOLOGY.
4. **Cesaro P.**, van Tuinen D., Copetta A., Chatagnier O., Berta G., Gianinazzi S., Lingua G. Preferential colonization of *Solanum tuberosum* L. roots by the fungus *Glomus intraradices* in arable soil of a potato growing area. Applied Environ. Microbiol. 74:5776-5783 (2008). Categoria BIOTECHNOLOGY & APPLIED MICROBIOLOGY.
5. **Cesaro P.**, Raiteri E., Demoz M., Castino R., Baccino F.M., Bonelli G., Isidoro Ciro. Expression of protein kinase C β 1 confers resistance to TNF α - and taxol-induced apoptosis in HT-29 colon carcinoma cells. Int. J. Cancer 93: 179-184 (2001). Categoria ONCOLOGY.