

Dr. Athina Boulaka

Postdoctoral Researcher

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Education

2014: Ph. D degree in Biological Sciences, Laboratory of Experimental Physiology, Medical School, University of Ioannina

2008: Bachelor's Degree (BSc) with an integrated Master's degree, Faculty of Biological Applications and Technologies, School of Health Sciences, University of Ioannina

Work experience

2022-present: Postdoctoral researcher, National Hellenic Research Foundation, Institute of Chemical Biology, Environment & Health Programme

Holistic analysis of intestinal microbiome for detection and validation of biomarkers and statistical analysis of the data within the project: Design and development of a dietary supplement for osteoporosis through mechanisms of the intestinal microbiome. Study of effectiveness and tolerance of the innovative dietary supplement (Osteome, NSRF 2014-2020).

01/2019-12/2021: Postdoctoral researcher, National Hellenic Research Foundation, Institute of Chemical Biology, Environment & Health Programme

In vitro and *in vivo* biological evaluation of β -glucans; analysis of Next Generation Sequencing (NGS) data within the project: Development of a novel functional food enriched with β -glucans isolated from edible mushrooms of Greek habitats (FUNglucan, NSRF 2014-2020).

01/2018-12/2018: Postdoctoral researcher, National Hellenic Research Foundation, Institute of Chemical Biology, Molecular Endocrinology Laboratory

Evaluation of anticancer activity of lead non-steroidal selective agonists of glucocorticoid receptor (SEGRA) and analysis of the gene profile regulated by GR within the project: Targeted therapeutic approaches against degenerative diseases, focusing on cancer and aging (KRIPIS: STHENOS-b, NSRF 2014-2020).

02/2015-11/2015: Postdoctoral Researcher, National Hellenic Research Foundation, Institute of Biological Sciences and Biotechnology, Molecular Endocrinology Laboratory

Development of selective non-steroidal agonists of glucocorticoid receptor within the project: Targeted therapeutic approaches against degenerative diseases, focusing on cancer and aging (KRIPIS: STHENOS, NSRF 2007-2013).

01/2014-01/2015: Postdoctoral Researcher, National Hellenic Research Foundation, Institute of Biological Sciences and Biotechnology, Molecular Endocrinology Laboratory Investigation of *in vitro* biological activity and action mechanism of natural compounds and their analogues using transcriptomics and *in vivo* evaluation of the most active compounds within the project: Development of natural products and their analogues for the prevention and treatment of osteoporosis: a transcriptomics, proteomics and metabolomics approach (SYNERGASIA: OSTEOPRO, NSRF 2007-2013).

11/2012-10/2013: External collaborator, University of Ioannina, Medical School, Laboratory of Experimental Physiology

In vitro evaluation of goat and sheep milk in platelet aggregation and in inhibition of platelet Thromboxane A₂ production within the project: Application of -omic technologies in the genetic characterization of local breeds of goats and sheep for improving their productivity and identifying potential bioactivity in their milk (GOSHOMICS, NSRF 2007-2013).

06/2006-08/2006: Undergraduate training, Biopathology laboratory of the Medical Center of Chania, Crete

Research Interests

- Biological evaluation of natural and chemical compounds
- Molecular mechanisms of carcinogenesis
- Nutrition, microbiome and health
- Identification and validation of biomarkers for metabolic and degenerative diseases

Publications (*In peer-reviewed journals*)

Boulaka A, Christodoulou P, Vlassopoulou M, Koutrotsios G, Bekiaris G, Zervakis G, Mitsou E, Saxami G, Kyriacou A, Zervou M, Georgiadis P, Pletsas V. Genoprotective properties and metabolites of β -glucan-rich edible mushrooms following their *in vitro* fermentation by human faecal microbiota. *Molecules* **2020**, 25, 3554. <https://doi.org/10.3390/molecules25153554>

Potamitis C, Siakouli D, Papavasileiou KD, **Boulaka A**, Ganou V, Roussaki M, Calogeropoulou T, Zoumpoulakis P, Alexis MN, Zervou M and Mitsiou DJ. Discovery of New Non-steroidal Selective Glucocorticoid Receptor Agonists. *Journal of Steroid Biochemistry and Molecular Biology* **2019**, 186:142-153. <https://doi.org/10.1016/j.jsbmb.2018.10.007>

Fokialakis N, Alexi X, Aligiannis N, **Boulaka A**, Meligova AK, Kalpoutzakis E, Pratsinis H, Cheilari A, Mitsiou DJ, Mitakou S, Alexis MN. Biological evaluation of isoflavonoids from *Genista halacsyi* using estrogen-target cells: Activities of glucosides compared to aglycones. *PLOS ONE* **2019**, 14(1): e0210247. <https://doi.org/10.1371/journal.pone.0210247>

Thai QD, Tchoumtchoua J, Makropoulou M, **Boulaka A**, Meligova AK, Mitsiou DJ, Mitakou S, Michel S, Halabalaki M, Alexis MN, Skaltsounis AL. Phytochemical study and biological evaluation of chemical constituents of *Platanus orientalis* and *Platanus x acerifolia* buds. *Phytochemistry* **2016**, 130:170-81.
<https://doi.org/10.1016/j.phytochem.2016.04.006>

Tchoumtchoua J, Makropoulou M, Ateba SB, **Boulaka A**, Halabalaki M, Lambrinidis G, Meligova AK, Mbanya JC, Mikros E, Skaltsounis AL, Mitsiou DJ, Njamen D, Alexis MN. Estrogenic activity of isoflavonoids from the stem barks of the tropical tree *Amphimas pterocarpoides*, a source of traditional medicines. *Journal of Steroid Biochemistry and Molecular Biology* **2016**, 158:138-148. <https://doi.org/10.1016/j.jsbmb.2015.12.015>

Simos Y, Fthenakis G, Zelovitis J, **Boulaka A**, Giouli M, Georgiou E, Ragos V, Tzora A, Tsangaris G, Arsenos G, Karkabounas S, Peschos D. Functional responses of human and rabbit platelets induced by milk from indigenous Greek dairy goats (*Capra Prisca*). *Journal of Applied Pharmaceutical Science* **2016**, 6(5): 63-67.
<https://doi.org/10.7324/JAPS.2016.60510>

Simos Y, Metsios A, Verginadis I, D'Alessandro AG, Loiudice P, Jirillo E, Charalampidis P, Kouimanis V, **Boulaka A**, Martemucci G, Karkabounas S. Antioxidant and anti-platelet properties of milk from goat, donkey and cow: An *in vitro*, *ex vivo* and *in vivo* study. *International Dairy Journal* **2011**, 21: 901-906.
<https://doi.org/10.1016/j.idairyj.2011.05.007>