

PERSONAL INFORMATION

First name: Maria

Last name: Botou

Date of Birth: 13/04/1986

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EDUCATION

9/2004–10/2011: BSc, Department of Biological Applications and Technologies, Science and Technology School, University of Ioannina.

01/10/2009-07/09/2010: Diploma thesis in Laboratory of Biological Chemistry, Department of Medicine, University of Ioannina. Thesis title: “The role of transmembrane segment 8 (TM8) of the permease YgfO (XanQ): Analysis of the residue Asp-276”. PI Professor Stathis Frillingos, Faculty of Medicine, University of Ioannina.

17/01/2012–16/06/16: PhD in Biological Chemistry, Faculty of Medicine, University of Ioannina. Title of thesis: “Structure-function and evolutionary relationships in purine permeases of the NAT/NCS2 family”, Principal Investigator Stathis Frillingos, Professor of Biological Chemistry, Faculty of Medicine, University of Ioannina.

01/09/2016-today: Postdoctoral researcher in Laboratory of Biological Chemistry, Faculty of Medicine, Research group of Professor Stathis Frillingos.

PARTICIPATION IN RESEARCH PROGRAMMS

01/08/2012-30/04/2015: As PhD candidate in the program entitled: “Membrane transport: Structure-function and evolutionary relationships (EVOTRANS)”, co-financed by the European Social Fund (ESF) and Greek national funds through the Operational Program "Education and Lifelong Learning" of the National Strategic Reference Framework (NSRF) – THALIS program - support of research and innovation. PI Professor Stathis Frillingos, Faculty of Medicine, University of Ioannina.

15/05/2015-31/07/2015: As researcher in the program entitled: “Studying the Biochemical Role of Genes Involved in Symbiotic Nitrogen Fixation in Legume Root Nodules (NodHypSN)”, co-financed by the European Union (European Social Fund-ESF) and Greek national funds through Operational Program “Education and Lifelong Learning” of the National Strategic Reference Framework (NSRF)-Research Funding Program “Excellence II (Aristeia II). PI Assistant Professor Emmanuel Flietakis, Agricultural University of Athens.

PUBLICATIONS IN PEER-REVIEW JOURNALS

1. Mermelekas G., Georgopoulou E., Kallis A., **Botou M.**, Vlantos V., and Frillingos S. (2010). Cysteine-scanning analysis of helices TM8, TM9a, TM9b and intervening loops in the YgfO xanthine permease: a carboxyl group is essential at position Asp-276. *J. Biol. Chem.* **285**, 35011-35020

2. Papakostas K., **Botou M.** and Frillingos S. (2013). Functional identification of the hypoxanthine/guanine transporters YjcD and YgfQ and the adenine transporters PurP and YicO of *Escherichia coli* K-12. *J. Biol. Chem.* **288**, 36827-40
3. **Botou M.**, Lazou P., Papakostas K., Lambrinidis G., Evangelidis T., Mikros E. and Frillingos S. (2018). Insight on specificity of uracil permeases of the NAT/NCS2 family from analysis of the transporter encoded in the pyrimidine utilization operon of *Escherichia coli*. *Mol Microbiol* **108**, 204-219
4. Chaliotis A, Vlastaridis P, Ntountoumi C, **Botou M**, Yalelis V, Lazou P, Tatsaki E, Mossialos D, Frillingos S, Amoutzias GD. (2018). NAT/NCS2-hound: A webserver for the detection and evolutionary classification of prokaryotic and eukaryotic nucleobase-cation symporters of the NAT/NCS2 family. *Gigascience* doi: 10.1093/gigascience/giy133.

PRESENTATIONS IN SCIENTIFIC CONFERENCES

1. Frillingos S., Mermelekas G., Papakostas K., **Botou M.**, Karena E. and Georgopoulou E., "Role of putative transmembrane helix TM8 in the nucleobase-ascorbate transporter family", Hellenic Society for Biological Sciences, Proceedings of the 32nd Scientific Conference, Karpenissi May 20-22, 2010. Proceedings, 410-411 (2010)
2. **Botou M.**, Karena E. and Frillingos S., "The role of the Asp-276 carboxyl group in the xanthine transporter XanQ of *E.coli*", Hellenic National Initiative Mikrobiokosmos (MBK), 4th National MBK Conference, University of Ioannina, Oct. 21-23, 2011. Proceedings, 176-177 (2011)
3. Papakostas K., **Botou M.**, Kalloniati C., Fletmetakis E. and S. Frillingos, "Genetic and functional analysis of purine transporters from *Sinorhizobium meliloti*", Hellenic National Initiative Mikrobiokosmos (MBK), 4th National MBK Conference, University of Ioannina, Oct. 21-23, 2011. Proceedings, 178-179 (2011)
4. Frillingos S., Papakostas K., **Botou M.** and Karena E., "Structure-function analysis of two new bacterial members in the NAT/NCS2 transporter family", Gordon Research Conference, Membrane transport proteins, Les Diablerets, Switzerland, July 1-6 (2012)
5. **Botou M.**, Papakostas K., Kalliampakou K.I., Fletmetakis E. and Frillingos S., "Structure-function analysis of purine uptake in nitrogen-fixing rhizobacteria", 63th Panhellenic Congress of Biochemistry and Molecular Biology, Heraklio, Nov 9-11, 2012. P117. Book of Abstracts, 202 (2012)
6. Papakostas K., **Botou M.** and Frillingos S., "Characterization and structure-function analysis of bacterial members of the AzgA-like family of secondary membrane transporters", 8th International Research Conference "Biomedical Transporters 2013: Membrane Transporters in Drug Discovery and Preclinical Development", St Moritz, Switzerland, Aug 11-15, 2013. P60. Book of Abstracts, 111 (2013)
7. **Botou M.**, Papakostas K. and Frillingos S., "Functional dissection of the adenine-guanine-hypoxanthine transporters of *Escherichia coli*", 64th Panhellenic Congress of Biochemistry and Molecular Biology, Athens, Dec 6 - 8, 2013. P45. Book of Abstracts, 57 (2013)
8. Lazou P., **Botou M.**, Papakostas K., Karena E. and Frillingos S., "Functional profile analysis of nucleobase transporters in the opportunistic pathogen *Acinetobacter calcoaceticus*",

- Hellenic Society for Biological Sciences, Proceedings of the 36th Scientific Conference, Ioannina May 8-10, 2014. Proceedings, 182-183 (2014)
9. **Botou M.**, Kalliampakou K.I., Karalias G., Kalloniati C., Papakostas K., Flemetakis E. and Frillingos S., "Possible role of xanthine transmembrane transport in the nitrogen-fixing bacterium *Sinorhizobium meliloti*", Hellenic Society for Biological Sciences, Proceedings of the 36th Scientific Conference, Ioannina May 8-10, 2014. Proceedings, 246-247 (2014)
 10. Papakostas K., **Botou M.** and Frillingos S., "The purine-pyrimidine transporter RutG from *Escherichia coli*", Hellenic Society for Biological Sciences, Proceedings of the 36th Scientific Conference, Ioannina May 8-10, 2014. Proceedings, 288-289 (2014)
 11. **Botou M.**, Kalliampakou K.I., Karalias G., Kalloniati C., Papakostas K., Flemetakis E., and Frillingos S., "Cellular uptake and utilization of xanthine by the nitrogen-fixing symbiotic rhizobium *Sinorhizobium meliloti*", XVI International Congress on Molecular Plant-Microbe Interactions, Rhodes, Greece 6-10 July, P626 (2014)
 12. Yalelis V., **Botou M.** and Frillingos S., "Dissection of the selectivity switch between closely related adenine and guanine/hypoxanthine transporters of family NCS2", 6th Conference of Hellenic Scientific Society Mikrobiokosmos, Athens, Greece, April 3-5, 2015. Book of Abstracts, 106-107 (2015)
 13. Tatsaki E., Karena E., **Botou M.** and Frillingos S., "A comprehensive analysis of conserved sequence patterns for the discovery of all functionally important residues in the microbial purine Nucleobase transporters of family NAT/NCS2", 6th Conference of Hellenic Scientific Society Mikrobiokosmos, Athens, Greece, April 3-5, 2015. Book of Abstracts, 333-334 (2015)
 14. **Botou M.**, Papakostas K., Evangelidis T., Mikros E. and Frillingos S., "Structure-function analysis of the different selectivity preferences of pyrimidine and/or purine transporters in the Nucleobase: Cation Symporter-2 (NCS2) family", 40th FEBS Congress-The Biochemical Basis of the Life, Berlin, Germany, 4-9-July, 2015. *FEBS J.* 282(S1), 11(2015)
 15. Kalliampakou K., Anastasiou I., Karalias G., Komaitis F., **Botou M.**, Frillingos S. and Flemetakis E. "Purine transport and metabolism in *Medicago truncatula* nitrogen-fixing nodules". 34th Small Meeting of Yeast Transport and Energetics, Chania, Greece, Aug 29-Sept 1, 2016. Book of Abstracts, 36 (2016)
 16. Frillingos S., Lazou P., Tatsaki E., Yalelis V. and **Botou M.** "Functional, phylogenetic and mutational analysis of bacterial purine/pyrimidine permeases of the Nucleobase: Cation Symporter-2 family for elucidating distinct substrate preferences and structure-function splits". 34th Small Meeting of Yeast Transport and Energetics, Chania, Greece, Aug 29-Sept 1, 2016. Book of Abstracts, 44 (2016).
 17. **Botou M.**, Karena E., Tatsaki E., Lambrinidis G., Mikros E. and Frillingos S. "The role of Ser/Asn-93 in purine substrate preference as revealed by mutational analysis of the xanthine/uric acid permease SmLL9 from *Sinorhizobium meliloti*" 67th Panhellenic Congress of Biochemistry and Molecular Biology, Ioannina, Nov 25 - 27, 2016. P57. Book of Abstracts, 158 (2016)
 18. Yalelis V., Lazou P., **Botou M.** and Frillingos S. "Molecular determinants of the adenine/hypoxanthine selectivity in the homology cluster of salvageable purine permeases of Symporter family NCS2", 67th Panhellenic Congress of Biochemistry and Molecular Biology, Ioannina, Nov 25 - 27, 2016. P59. Book of Abstracts, 160 (2016)

19. Lazou P., **Botou M.**, Evangelidis T., Mikros E. and Frillingos S. "A unique homology cluster of bacterial pyrimidine permeases highlights the role of a binding-site phenylalanine residue in distinguishing uracil from thymine", 67th Panhellenic Congress of Biochemistry and Molecular Biology, Ioannina, Nov 25 - 27, 2016. P60. Book of Abstracts, 161 (**2016**)
20. Georgopoulou E., Karena E., **Botou M.** and Frillingos S. "Insight on the evolvability of NCS2 purine transporters from analysis of a cross-homolog chimera", 67th Panhellenic Congress of Biochemistry and Molecular Biology, Ioannina, Nov 25 - 27, 2016. P71. Book of Abstracts, 172 (**2016**)
21. **Botou M.**, Lazou P., Mikros E. and Frillingos S. "The transporter-encoding gene of the pyrimidine utilization operon (*rut* operon) encodes a permease with broad substrate specificity", 68th Panhellenic Congress of Biochemistry and Molecular Biology, Athens, Nov, 10-12, 2017. P15. Book of Abstracts, 105 (**2017**)

FOREIGN LANGUAGES

English: First Certificate in English, University of Cambridge (**2000**)

Certificate of Proficiency in English, University of Michigan (**2002**)

IT SKILLS

Windows, MS Office, Bioinformatics software: BLAST, CLUSTAL Omega, PyMol, MEGA6.

Vellum Diploma in IT Skills (**2016**)