

Athanasios Goulas

(MSc, Ph.D), Food Technologist

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E-mail : athanasios_goulas@yahoo.com
Sex : Male
Date of Birth : 13 August 1974
Place of Birth : Vogatsiko Kastorias
Military Service : Sub-lieutenant (March 1997 to February 1999)

Education

- Oct. 2000 to Sep. 2003 **Ph.D - Reading University (UK), School of Food Biosciences**
“Applications of Membrane Technology on Enzymatic Oligosaccharide Manufacture and Purification”. (*Sponsored by the State Scholarships Foundation of Greece and British Sugar plc*).
 - A study on the isomaltooligosaccharide and oligodextran enzymatic synthesis mechanisms and development of continuous manufacture and purification processes.
 - Specialised on pressure-driven membrane filtration processes (e.g. UF, NF), enzyme manufacture, purification and characterisation, fermentation technology and protein and carbohydrate analysis techniques (HPLC, TLC, HPAEC-PAD, SDS-PAGE etc).
- Oct. 1999 to Oct. 2000 **MSc - Reading University (UK), School of Food Biosciences**
Degree on Food Technology (Quality Assurance)
(*Sponsored by the State Scholarships Foundation of Greece*).
 - Food Technology degree including food processing quality assurance, quality management systems, quality tools (Statistics, HACCP, GMP), food legislation and labelling.
 - MSc project on “Nanofiltration Purification of Oligosaccharides”.
- Oct. 1992 to Jan. 1997 **BSc – Alexander Technological Educational Institution of Thessaloniki – Dept. of Food Technology - Food Technology degree (Graduated with grade: 7.9)**
 - BSc project on “Absorption of Fatty Acids on Amylose Extrusion Products”.
- Mar. 1996 to Sep. 1996 **Erasmus. The Netherlands Dairy Research Institute (NIZO) (Full-time)**
Working as part of the NIZO membrane group on “Selective Separation of Amino Acids using Nanofiltration and Ultrafiltration membrane processes with the aim of resolving the mass transfer mechanism of amphoteric components”. Responsibilities varied from designing and performing pilot plant experiments to process and interpretation of the results.

Further Qualifications (Seminars, Conferences)

- Jul. 2004 **Food Safety Management Systems Auditor/Lead Auditor**
Successfully completed the course (including the final assessment) concentrating at providing the skills and knowledge to audit quality management systems within a food safety context (ISO 2000:9000 series of standards).
- June 2000 **Royal Institute of Public Health certificate**
On HACCP principles and their application in Food Safety (completed with Credit).
- Mar. 2006 **Research work presentation** with title “Membrane separations for the production and fractionation / purification of enzymatically synthesised oligosaccharides” to a conference organized by the Society of Chemical Industry (SCI) that took place in London with general title “Separations of Value Added Products in the Food Industry”.
- June 2007 **Conference** with title “Probiotech 2007 - The professional event answering probiotics’ development issues: scientific fact / regulation /technologies allowing industrial applications”.

Previous / Current Employment

- May 2008 to current time **Technical Control Dept. - Commerce Division of the Thessaloniki Prefecture**
Responsibilities include sampling of food products in the market and control of food related businesses based on the Greek and EU legislation.

- Jan. 2007 to Apr. 2008 **Technical Development Specialist - Clasado Ltd (UK)**
Responsibilities included: **1.** design, research and development of a process for the commercial production of galactooligosaccharides based on the company's intellectual property, **2.** introduction of the process in production plants and training of the personnel involved, **3.** quality assurance of the produced product, and **4.** further research on process efficiency improvement and alternative raw material use.
- Oct. 2003 to Dec. 2006 **Research Associate (Post Doc) – The University of Reading, School of Food Biosciences**
Research program financed by Clasado Ltd for: **1.** designing, developing and evaluating a process for the production of galactooligosaccharides, **2.** scale-up studies of the process at pilot-plant and industrial level, and **3.** development of technologies for further product improvement. The research work included fermentations, enzymatic synthesis of oligosaccharides, process-scale centrifugation for enzyme recovery, nanofiltration for sugar purification, product crystallization, spray drying of sugars and product analysis for quality assurance.
- May to June 2003 **Research Assistant – The University of Reading, School of Food Biosciences**
Working for industrial sponsors for the production of a β -galactosidase from *Bifidobacterium bifidum* with anaerobic pilot plant scale fermentations.
- Oct 2001 to May 2003 **Laboratory Assistant – The University of Reading, School of Food Biosciences (part-time)**
Laboratory assistant during the practical training of students on food microbiology, protein structure, food analysis (HPLC), food biotechnology fermentations, enzymology, enzyme membrane bioreactors, and carbohydrate analysis.

Publications

- [1] Goulas, A., Kapasakalidis, P., Sinclair, H.R., Grandison, A.S. & Rastall, R.A. (2002). Purification of Oligosaccharides by Nanofiltration. *Journal of Membrane Science*, **209**, pp321-335.
- [2] Goulas, A., Grandison, A.S. & Rastall, R.A. (2003). Fractionation of Oligosaccharides by Nanofiltration, *Journal of the Science of Food and Agriculture*, **83**, pp675-680.
- [3] Goulas, A., Fisher, D.A., Grimble, G.K., Grandison, A.S. & Rastall, R.A. (2004). Synthesis of Isomaltooligosaccharides and Oligodextrans by the Combined Use of Dextranucrase and Dextranase. *Enzyme and Microbial Technology*, **35**, pp327-338.
- [4] Goulas, A., Cooper, J.M., Grandison, A.S. & Rastall, R.A. (2004). Synthesis of Isomaltooligosaccharides and Oligodextrans in a Recycle Membrane Bioreactor by the Combined Use of Dextranucrase and Dextranase. *Biotechnology and Bioengineering*, **88**, pp778-787.
- [5] Tzortzis, G., Goulas, A., Baillon, M.L., Gibson, G.R. & Rastall, R.A. (2004). *In vitro* evaluation of the fermentation properties of galactooligosaccharides synthesised by α -galactosidase from *Lactobacillus reuteri*, *Applied Microbiology and Biotechnology*, **64**, pp106-111.
- [6] Tzortzis, G., Goulas, A. & Gibson, G.R. (2005). Synthesis of prebiotic galactooligosaccharides using whole cells of a novel strain, *Bifidobacterium bifidum* NCIMB 41171. *Applied Microbiology and Biotechnology*, **68**, pp412-416.
- [7] Tzortzis, G., Goulas, A. Jennifer, M.G. & Gibson, G.R. (2005). A novel galactooligosaccharide mixture increases the *bifidobacterial* population numbers in a continuous *in vitro* fermentation system and in the proximal colonic contents of pigs *in vivo*. *The Journal of Nutrition*, **135**, pp1726-1731.
- [8] Goulas, A., Tzortzis, G. & Gibson, G.R. (2007). Development of a process for the production and purification of α - and β -galactooligosaccharides from *Bifidobacterium bifidum* NCIMB 41171. *International Dairy Journal*, **17**, pp648-656.
- [9] *Conference publication*: Grandison, A.S., Goulas, A. & Rastall, R.A. (2002). The use of dead-end and cross-flow nanofiltration to purify prebiotic oligosaccharides from reaction mixtures. *Songklanakarin Journal of Science and Technology*, **24**, pp915-928.

[10] *Book Chapter*: Goulas, A. & Grandison, A.S. (2008). Applications of Membrane Separation. In: Advanced Dairy Technology, (pp35-75), Ed. Britz, T. & Robinson, R., Blackwell publishing, Oxford.

[11] Goulas, T., Goulas, A., Tzortzis, G. & Gibson, G.R. (2007). Molecular cloning and comparative analysis of four β -galactosidase genes from *Bifidobacterium bifidum* NCIMB 41171. *Applied Microbiology and Biotechnology*, **76**(6), pp1365-1372.

[12] Goulas, T., Goulas, A., Tzortzis, G. & Gibson, G.R. (2009). A novel α -galactosidase from *Bifidobacterium bifidum* with transgalactosylating properties: gene molecular cloning and heterologous expression. *Applied Microbiology and Biotechnology*, **82**, pp471-477.

[13] Goulas, T., Goulas, A., Tzortzis, G. & Gibson, G.R. (2009). Comparative analysis of four β -galactosidases from *Bifidobacterium bifidum* NCIMB 41171: purification and biochemical characterisation. *Applied Microbiology and Biotechnology*, **82**, pp1079-1088.

[14] Goulas, T., Goulas, A., Tzortzis, G. & Gibson, G.R. (2009). Expression of four β -galactosidases from *Bifidobacterium bifidum* NCIMB 41171 and their contribution on the hydrolysis and synthesis of galactooligosaccharides. *Applied Microbiology and Biotechnology*, (*in press*) DOI 10.1007/s00253-009-2009-5.

Patents and Patent applications

[1] Inventors: Goulas, A.K., Tzortzis, G. (2007). Process for the production of oligosaccharides, Pub.No.: WO/2007/054459, Int.Appl.No.:PCT/EP2006/068029.

[2] Inventors: Tzortzis, G., Goulas, A.K., Goulas, T. (2007). Alpha-Galactosidase from *Bifidobacterium bifidum* and its use, Pub.No.: WO/2007/071987, Int.Appl.No.:PCT/GB2006/004796.

[3] Inventors: Tzortzis, G., Goulas, A.K., Goulas, T. (2007). Galactosidase with alpha-galactosyltransferase activity, Pub.No.: WO/2007/088324, Int.Appl.No.:PCT/GB2007/000178.

[4] Inventors: Tzortzis, G., Goulas, A.K., Goulas, T. (2007). Beta-Galactosidase with transgalactosylating activity, Pub.No.: WO/2007/110619, Int.Appl.No.:PCT/GB2007/001081.

References

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