

**Administrator for post graduate studies and adjunct BJARNHEIDUR K
GUDMUNDSDOTTIR**



**Faculty of Medicine, School of Health Sciences, University of
Iceland, Læknagarður, Vatnsmýrarvegur 6, 101 Reykjavík. E-
mail: bjarngud@hi.is**

Education

1994-1997: Ph.D. University of Iceland, Faculty of Medicine. Thesis: *Aeromonas salmonicida* subsp. *salmonicida*: A study of extracellular virulence factors and immunity in Atlantic salmon (*Salmo salar* L.). Supervisor: Prof. Dr. G. Georgsson.

1983-1984: Genetics, postgraduate studies, University of Minnesota, 30 EU credits.

1979-1981: Bachelor Degree of Education, The University. College of Education, Reykjavík.

1972-1973: Diploma in Molecular Biology, University of Iceland. Thesis: Research on genes encoding *E. coli* ribosomal proteins. Supervisor: Prof. Dr. G. Eggertsson.

1968-1972: Bachelor Degree of Biology, University of Iceland

Employment

Administrator for post graduate studies from 2014 at Faculty of Medicine, School of Health Sciences, University of Iceland.

Adjunkt from 2001 at Faculty of Medicine, School of Health Sciences, University of Iceland.

Group leader from 2011 Biomedical Center, Faculty of Medicine, School of Health Sciences, University of Iceland.

Research professor from 1999 to 2014 Institute for Experimental Pathology, University of Iceland. Research area: Virulence of fish pathogenic bacteria and prophylaxis in aquaculture. Project management, supervision of postgraduate students in biomedical sciences. **Adjunct** in postgraduate research studies, School of Health Sciences, Faculty of Medicine, University of Iceland from 2002.

Teaching. Advanced course for post graduate students in Microbial Pathogenicity, Faculty of Medicine, from 2001.

Supervision of postgraduate students: Supervisor of 4 MSc and 4 PhD and co-supervisor of 1 MSc and 2 PhD students in biomedical sciences, Faculty of Medicine, University of Iceland. Supervision of students in main subjects: 1 cand.med.vet.; 2 diploma; and 3 BSc, the Norwegian College of Vet. Med, Norway, Ernst-Moritz-Arndt University, Greifswald, and University of Iceland.

International cooperation – last 5 years

Evaluation of doctoral dissertations: An opponent at 6 doctoral disputations (University of Iceland; University of Bergen, Norway; Norwegian School of Veterinary Science, Oslo; and University of Tromsø). External examiner for 2 PhD theses; Helsinki University, Finland; Chairman for 11 PhD evaluation committees (University of Iceland).

Organizing committees for symposia International Conference on Fish Diseases and Fish Immunology, Reykjavík Sept 6th-9th 2008, **corresponding contact, chair of the Scientific secretariat**

and member of the organizing committee. A member of the program committee for **The 3rd FEMS Congress of European Microbiologist** 2009 June 28 – July 2 Göteborg, SWEDEN.

A member of **FEMS faculty** 2009. A member of the International Advisory Board for the **XIII International Congress of Bacteriology and Applied Microbiology** 2011 Sept 6 -10, Sapporo, Japan.

Council membership

A member of the **governing board for the Institute for Experimental Pathology**, University of Iceland, Keldur, 1999-2002. A council member of the **Microbiological Society of Iceland** and the **Icelandic representative in FEMS** (Federation of European Microbiological Societies) council 1997-2003. A council member and chairman for the **Microbiological Society of Iceland** 2000-2004 and a member of **FEMS grants board** 2000-2003. A council member of **the Nordic Symposium on Fish Immunology**, NOFFI 1999-2001. A council member of **the Icelandic Cancer Society's science board** 1999-2002 and a council member of **the Icelandic Society of Biology** 1986-1990. A board member of the **council for postgraduate studies within the Faculty of Medicine**, University of Iceland, since 2001. A board member of the **council for evaluating research activities of scientist within the Faculty of medicine**, 2004-2009.

Honors

University of Iceland 2005. Award for a praiseworthy success in occupation as a Research professor

Guest Editor 2014: Microbial Biotechnology, Thematic Issue: Fish Vaccines. Guest Editors: Joachim Frey, Bjarnheidur Gudmundsdottir, Beatriz Novoa and Antonio Figueras. Volume 7, Issue 5, Pages i–iii, 373–486.

PhD thesis

Gudmundsdottir, B. K. 1997. *Aeromonas salmonicida* subspecies *achromogenes*: A study of extracellular virulence factors and immunity in Atlantic salmon (*Salmo salar* L.). PhD thesis from the Faculty of Medicine, University of Iceland, 82p. and 7 papers.

Scientific publications in reviewed international journals – last 12 years

Bjornsdottir, B. Gudmundsdottir, S., Bambir, S. H., Magnadottir, B. and **Gudmundsdottir, B. K.** 2004. Experimental infection of turbot (*Scophthalmus maximus* L.) by *Moritella viscosa*, vaccination effort, and vaccine induced side effects. *Journal of Fish Diseases*, **27**,645-666.

Bjornsdottir, B. Gudmundsdottir, S., Bambir, S. H. and **Gudmundsdottir, B. K.** 2005 Experimental infection of turbot, *Scophthalmus maximus* (L.), by *Aeromonas salmonicida* subsp. *achromogenes* and evaluation of cross protection induced by a furunculosis vaccine. *Journal of Fish Diseases*, **28**, 181–188.

Magnadottir, B., **Gudmundsdottir, B. K.** Lange, S., Steinarsson, A., Oddgeirsson, M., Bowden, T., Bricknell, I., Dalmo, R.A., Gudmundsdottir, S. 2006. Immunostimulation of larvae and juveniles of cod, *Gadus morhua* L. *Journal of Fish Diseases*. **29**, 147-155.

Gudmundsdottir, B. K., Bjornsdottir, B., Bambir S. H., and Gudmundsdottir, S. 2006. A comparative study of susceptibility and induced pathology of cod, *Gadus morhua* (L.) and halibut *Hippoglossus hippoglossus* (L.), following experimental infection with *Moritella viscosa*. *Journal of Fish Diseases*. **29**, 481-487.

Gudmundsdottir, B. K. and Bjornsdottir, B. 2007. Vaccination against atypical furunculosis and winter ulcer disease of fish: a review. *Vaccine*. **25**, 5512- 5523.

- Maier, V. H., Dorn, K., **Gudmundsdóttir, B. K.** and Gudmundsson G.H. 2008. Characterisation of cathelicidin gene family members in divergent fish species. *Molecular Immunology* **45** , 3723–3730.
- Lauzon , H. L., Gudmundsdottir, S., Pedersen, M. H., Budde, B.B, and **Gudmundsdottir, B.K.** 2008. Isolation of putative probionts from cod rearing environment. *Veterinary Microbiology* **132** , 328–339.
- Arnadottir, H., Hvanndal, I., Andresdottir, V., Burr, S.E., Frey J and **Gudmundsdottir, B. K.** 2009. The AsaP1 peptidase of *Aeromonas salmonicida* subsp. *achromogenes* is a highly conserved deuterolysin metalloprotease (family M35) and a major virulence factor. *Journal of Bacteriology* **191**, 403–410.
- Bjornsdottir, R., Johannsdottir, J., Coe, J., Smaradottir, H., Agustsson, Th., Sigurgisladottir, S. and **Gudmundsdottir, B.K.** 2009. Survival and quality of halibut larvae (*Hippoglossus hippoglossus* L) in intensive farming: possible impact of the intestinal bacterial community. *Aquaculture* **286**, 53–63.
- Bjornsdottir, B., Fridjonsson, O. H., Magnusdottir, S., Andresdottir, V., Hreggvidsson, G. O. **Gudmundsdottir, B. K.** 2009. Characterization of an extracellular vibriolysin of the fish pathogen *Moritella viscosa*. *Veterinary Microbiology* **136**, 326–334.
- Bjornsdottir, B., Fast,M.D.,Sperker,s.a., Brown, L. L. and **Gudmundsdottir, B. K.** 2009. Effects of *Moritella viscosa* antigens on immune gene regulation in an Atlantic salmon (*Salmo salar*) cell line (SHK-1). *Fish & Shellfish Immunology* **26**, 858–863.
- Gudmundsdottir, S., Magnadottir, B., Bjornsdottir, B. , Arnadottir, H., and **Gudmundsdottir, B. K.** 2009. Specific and natural antibody response of cod juveniles vaccinated against *Vibrio anguillarum*. *Fish & Shellfish Immunology* **26**, 619–624.
- Magnadottir, B., Gudmundsdottir, S., **Gudmundsdottir, B. K.**, and Helgason, S. 2009. Natural antibodies of cod (*Gadus morhus* L.): Specificity, activity and affinity *Comparative Biochemistry and Physiology Part B* **154**, 309–316.
- Bogdanovic, X. , Singh, R. K., Hentschke, J., **Gudmundsdóttir , B. K.** and Hinrichs, W. 2009. Crystallization and preliminary X-ray diffraction studies of AsaP1_E294A and AsaP1_E294Q, two inactive mutants of the toxic zinc metallopeptidase AsaP1 from *Aeromonas salmonicida* subsp. *achromogenes*. *Acta Crystallographica Section F: Structural Biology and Crystallization Communications* **F65**, 695-697.
- Hermansdottir, R., Johannsdottir J., Smaradottir H., Sigurgisladottir S., **Gudmundsdottir B.K.** and Bjornsdottir R. 2009. The effects of a pollock protein hydrolysate on innate immunity, development and the bacterial community structure of first feeding of Atlantic halibut (*Hippoglossus hippoglossus* L.) larvae. *Fish & Shellfish Immunology*, **27**, 595-602.
- Bjornsdottir, R., Karadottir, E. G., Johannsdottir, J., Thorarinsdottir, E.E., Smaradottir, H., Sigurgisladottir, S. and **Gudmundsdottir, B. K.** 2010. Selection of bacteria and the effects of bacterial treatment of Atlantic halibut (*Hippoglossus hippoglossus* L.) eggs and larvae. *Aquaculture*, **302**, 219–227
- Lauzon, H. L., Gudmundsdottir, A., Oddgeirsson M., Pétursdóttir S. K., Reynisson E., Bjornsdottir R. and **Gudmundsdott, B. K.** 2010. Effects of bacterial treatment at early stages of Atlantic cod (*Gadus morhua* L.) on larval survival and development, *Journal of Applied Microbiology* **108**, 624–632.
- Lauzon, H.L., Magnadottir, B. **Gudmundsdottir, B.K.**, Steinarsson, A. Arnason, I.O. Gudmundsdottir, S. 2010. Application of prospective probionts at early stages of Atlantic cod (*Gadus morhua* L.) rearing. *Aquaculture Research*, **41**, e576-e586.
- Lauzon, H.L., Gudmundsdottir, S., Petursdottir, S.K., Reynisson, E., Steinarsson, A., Oddgeirsson, M., Bjornsdottir, R., Gudmundsdottir, B.K., 2010. Microbiota of Atlantic cod (*Gadus morhua* L.) rearing systems at pre- and posthatch stages and the effect of different treatments. *Journal of Applied Microbiology*, **109**, 1775–1789.
- Lauzon, H.L. Gudmundsdottir, S. Steinarsson, A. Oddgeirsson, M., Martinsdottir, E., **Gudmundsdottir, B. K.** 2010. Impact of probiotic intervention on microbial load and performance of Atlantic cod (*Gadus morhua* L.) juveniles. *Aquaculture*, **310**, 139–144
- Bjornsdottir, B. Gudmundsdottir, T. and **Gudmundsdottir, B. K.** 2011. Virulence properties of *Moritella viscosa* extracellular products. *Journal of Fish Diseases*, **34**, 333–343.

- Schwenteit, J., Gram, L., Nielsen, K. F., Fridjonsson, O. H., Bornscheuer, U. T., Givskov, M. and **Gudmundsdottir, B. K.** 2011. Quorum sensing in *Aeromonas salmonicida* subsp. *achromogenes* and the effect of the autoinducer synthase AsaI on bacterial virulence. *Veterinary Microbiology*, **147**, 389–397.
- Broekman, D. C., Zenz, A., **Gudmundsdottir, B. K.**, Lohner, K., Maier, V. H. and Gudmundsson, G. H. 2011. Functional characterization of codCath, the mature cathelicidin antimicrobial peptide from Atlantic cod (*Gadus morhua*). *Peptides*, **32**, 2044–2051.
- Björnsdottir, R., Smáradóttir, H., Sigurgísladóttir, S. and **Gudmundsdottir, B. K.** 2011. Using inorganic clay as compared to marine microalgae for environmental shading during first feeding of Atlantic halibut larvae: effects on the cultivable bacterial community and larval survival. *Icelandic Agricultural*, **24**, 33–41.
- Björnsdottir, B., Hjerde, E., Bragason, B.Th., Gudmundsdottir, Th. Willassen, NP., and **Gudmundsdottir, B. K.** 2012. Identification of type VI secretion systems in *Moritella viscosa*. *Veterinary Microbiology*, **158**, 436–442.
- Schwenteit, J., Bogdanović, X., Fridjonsson, O. H., Aevarsson, A., Bornscheuer, U. T., Hinrichs, W. and **Gudmundsdottir, B. K.** 2013. Toxoid construction of AsaP1, a lethal toxic aspzincin metalloendopeptidase of *Aeromonas salmonicida* subsp. *achromogenes*, and studies of its activity and processing. *Veterinary Microbiology*, **162**, 687–694.
- Magnadóttir, B., **Gudmundsdottir, B.K.** and Groman, D. 2013. Immuno-histochemical determination of humoral immune markers within bacterial induced granuloma formation in Atlantic cod (*Gadus morhua* L.). *Fish & Shellfish Immunology* **34**, 1372–1375.
- Schwenteit J. M., Breithaupt, Teifke, J. P., Koppang, E. O., Bornscheuer, U. T., Fischer, U. and **Gudmundsdottir, B. K.** 2013. Innate and adaptive immune responses of Arctic charr (*Salvelinus alpinus*, L.) during infection with *Aeromonas salmonicida* subsp. *achromogenes* and the effect of the AsaP1 toxin, *Fish & Shellfish Immunology* **35**, 866–873.
- Gudmundsdottir, B. K.**, Gudmundsdottir, Sigrun, Gudmundsdottir, Sigridur, Magnadóttir, B. 2014. Yersiniosis of Atlantic cod, *Gadus morhua* (L.) and characterization of the infective strain. *Journal of Fish Diseases*, **37**, 511–519.
- Schwenteit J. M., Weber, B., Milton, D. L., Bornscheuer, U. T. and **Gudmundsdottir, B. K.** 2015. Construction of *Aeromonas salmonicida* subsp. *achromogenes* AsaP1-toxoid strains and study of their ability to induce immunity in Arctic char, *Salvelinus alpinus* L. *Journal of Fish Diseases* **38**, 891–900.
- Bogdanović X, Schwenteit JM, Singh RK, **Gudmundsdottir BK**, Hinrichs W. 2016. Structural evidence of intramolecular propeptide inhibition of the aspzincin metalloendopeptidase AsaP1. *FEBS Letters* **590**, 3280–, 3294.

A book chapter

- Gudmundsdottir BK** and Björnsdóttir, B. 2017. *Aeromonas* spp. (*A. salmonicida* and *A. hydrophila*). In Woo, P. T. K. & Cipriano, R. C. (Eds.), *Fish Viruses and Bacteria: Pathobiology and Protection* (1 ed.). England: CABI, Nosworthy Way, Wallingford, Oxfordshire.

Student's theses

PhD theses

- Rannveig Björnsdóttir. 2010. The bacterial community during early production stages of intensively reared halibut (*Hippoglossus hippoglossus* L.). PhD thesis from the Faculty of Medicine, School of health Sciences, University of Iceland, 103p. and 4 papers.
- Hélène L. Lauzon. 2010. Preventive Measures in Aquaculture. PhD thesis from the Faculty of Medicine, School of health Sciences, University of Iceland, 130 p. and 5 papers.
- Bryndís Björnsdóttir 2011. *Moritella viscosa* virulence. PhD thesis from the Faculty of Medicine, School of health Sciences, University of Iceland, 107 p. and 4 papers.

Johanna M. Schwenteit.2014. Studies of *Aeromonas salmonicida* subsp. *achromogenes* Virulence in Arctic charr, *Salvelinus alpinus* L., with Focus on the Conserved Toxic Extracellular Metalloendopeptidase AsaP1. PhD thesis from the Faculty of Medicine, School of health Sciences, University of Iceland, 117 p. and 4 papers.

MSc theses

Íris Hvanndal 2003. Study of the gene encoding the bacterial protein toxin AsaP1 of *Aeromonas salmonicida*. M.S. thesis, University of Iceland, Faculty of Natural Sciences.

Bryndís Björnsdóttir 2004. Virulence of *Moritella viscosa* and *Aeromonas salmonicida* subsp. *achromogenes* in turbot. M.Sc. thesis from the Faculty of Medicine, School of health Sciences, University of Iceland, 114 p. and 2 papers.

Helga Árnadóttir 2006. Role of the AsaP1 toxin of *Aeromonas salmonicida* subsp. *achromogenes* in bacterial virulence. M.Sc. thesis from the Faculty of Medicine, School of health Sciences, University of Iceland, 106p.

Auður Aðalbjarnardóttir 2008. Study of the *Aeromonas* ExeD secretin. M.Sc. thesis from the Faculty of Medicine, School of health Sciences, University of Iceland, 64p.

Diploma theses

Johanna Hentschke 2008. Site-directed mutagenesis of the AsaP1 exotoxin of *Aeromonas salmonicida* ssp. *Achromogenes*. Diploma (30 ETCS) thesis, Institute for Experimental Pathology, University of Iceland, Keldur and Institute of Biochemistry, Ernst-Moritz-Arndt University Greifswald,54 p.

Nguyen Thi Thuy Giang 2017. Studies of experimental infections of Arctic Char (*Salvelinus alpinus*L.) with *Aeromonas salmonicida* subsp. *achromogenes*. Diploma (30 ETCS) thesis, The United Nations University, Fisheries and Training Programme, 61p.