

CURRICULUM VITAE

ADOLFO RIVERO-MULLER, PH.D.

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EMPLOYMENT HISTORY

08/2015-present	Senior Scientist , Turku Centre for Biotechnology, Åbo Akademi University and University of Turku, Finland
2014-present	Professor at the Department of Biochemistry and Molecular Biology, Medical University of Lublin, Lublin, Poland
2013-present	Adjunct Professor , Åbo Akademi University, Turku, Finland.
2015-2017	Assistant Professor , Institute for Biomedicine, University of Turku. Kiinamylynkatu 10. Department of Physiology. Turku, Finland.
02/2002– 2013	Research Scientist , Institute for BioMedicine, University of Turku, Turku, Finland (Professor Ilpo Huhtaniemi).
01/2000 – 02/2002:	Post-doctoral fellow , Turku Centre for BioTechnology, BioCity, Turku, Finland (Professor John Eriksson).
09/1996-01/2000:	Ph.D. Thesis , School of Biological Sciences, University of Surrey, United Kingdom (Dr. Miloslav Dobrota).
09/1995 - 09/1996:	Master's thesis at Surrey University, School of Biological Sciences United Kingdom (Dr. Miloslav Dobrota).
1994 – 1995:	Assistant , Department of BiInorganic Chemistry, National University of Mexico, Mexico City, Mexico (Prof. Lena Ruiz-Ramirez).

EDUCATION & ACADEMIC QUALIFICATIONS

- 2016 - **Habilitation** (equivalent to Reader in UK), Department of Biochemistry and Molecular Biology, Medical University of Lublin, Poland.
- Since 2014 **Visiting Professor** at Department of Biochemistry and Molecular Biology, Medical University of Lublin, Poland.
- 2002-2015 **Research Scientist**, Department of Physiology, Institute for Biomedicine, University of Turku, Finland.
- 2000 – 02: **Postdoctoral** training at Centre for Biotechnology, Turku, Finland. Prof John Eriksson's laboratory.
- 1996 - 00: **Ph.D. degree**, School of Biological Sciences University of Surrey, Guildford, Surrey, United Kingdom. - Programme in Molecular Biology and Toxicology.
- 1995 - 6: **Master's degree**; School of Biological Sciences University of Surrey, Guildford, Surrey, United Kingdom. - Programme in Molecular Biology and Toxicology.
- 1993 **Graduation**, School of Biology, Universidad Simón Bolívar, México.

ATTENDED COURSES AND RESEARCH VISITS

ET/Red recombination course, Max Planck Institute for Molecular Biology, Dresden, Germany (23-28.3.2003).

Next generation sequencing data analysis with *Chipster* (3-3.5.2012, 14h), organized by CSC, Turku, Finland.

Research visits: Institute of Reproductive and Developmental Biology, Department of Surgery and Cancer, Imperial College, London, UK. 18-23.4.2004, 12-24.6.2005, 7-24.3.2006, and 10-16.5.2010.

Evolutionary Bioinformatics intensive course, 5-days, December 2011, Turku, Finland.

AWARDS AND RESEARCH ACHIEVEMENTS

2020: **Rector's award for scientific achievements in the year 2019**. Medical University of Lublin, Poland.

2019: **Rector's award for scientific achievements in the year 2018**. Medical University of Lublin, Poland.

2018: **Best educator/teacher** in the Faculty during 2017/2018. Medical University of Lublin, Poland.

2018: **Rector's award for scientific achievements in the year 2017**. Medical University of Lublin, Poland.

2018: A top reviewer in Publons' global Peer Review Awards

2017: **Rector's award for scientific achievements in the year 2016**. Medical University of Lublin, Poland.

2017: **Award for Best paper** published by the **Society for Endocrinology's five Journals** (Journal of Endocrinology, Journal of Molecular Endocrinology, Endocrine-Related Cancer, Clinical Endocrinology and Endocrine Connections) in 2016.

2016: **Rector's award for scientific achievements in the year 2015**. Medical University of Lublin, Poland.

2015: One of my PhD students, Valeriy Paramanov, was accepted to the **Synthetic Biology in Action** course at EMBL in Heidelberg with the project "*Engineering silica-nanoparticles as smart vehicle for neuro-endocrine cancers*".

2015: **Rector's award for scientific merits in the year 2014**. Medical University of Lublin, Poland.

2011: **Elias Tillandz prize** for the best publication of all Universities in Turku in 2010, Finland.

2010: European Endocrine Meeting, Oral Communications section selection: **Highlights**. ECE2010. Prague, Czech Republic 24-28 April.

2010: **InnoCentive** Award Winner: **Direct Molecular Detection of Proteins and Nucleic Acids** (InnoCentive challenge # 8915696).

2008: **InnoCentive** Award Winner: **Transgene Detection** (InnoCentive challenge # 5402964).

2007: **Best oral presentation** award by the Finnish endocrine society (Finnish endocrine society annual meeting, Helsinki, Finland).

2007: **Exceptional Research** award by the Endocrine Society (ENDO meeting, Toronto, Canada).

2006: **InnoCentive** Award Winner: **Detection of specific DNA sequences** (InnoCentive challenge #3084371)

2007: **License for Animal Experimentation**; Course provides competence for category C according to the European Convention.

2006: **Cloning and characterization** of the porcine PGFS and mPGES-1 genes (GenBank accession No. AY863054 and AY857634, respectively).

Note: InnoCentive challenges are problems that organisations, e.g. **industries**, have not been able to solve, or have no expertise upon, and thus look for solutions in the large community (crowdsourcing). The challenges are placed at InnoCentive's webportal and anybody can try to solve them. The proposed solutions are then sent to the seeker organisation, who selects the best solution(s) (InnoCentive Award). Beside industry, many other organisations such as several clinics, the Nature publishing group, charity organisations, and NASA have challenges to be solved using this crowdsourcing model. More information regarding InnoCentive at <https://www.innocentive.com>.

TEACHING EXPERIENCE

- Since 2009 **Lecturer** of the ***One gene several phenotypes*** as well as the lecture ***Evolution: from genes to phenotype and back to genes*** for Health Biosciences Master's degree at the Medical Faculty University of Turku, Finland.
- Since 2015 **Lecturer** of ***Gene Editing Technologies in Animal Models*** to Health Biosciences Master students, University of Turku, Finland.
- 2015 **Advance synthetic biology and genetics** to a chemical engineer audience at Chemistry Faculty of Åbo Akademi University, Finland.
- Since 2014 **Organiser and main lecturer** of the course ***Genetics, Methods and Models in Drug Development*** at the Department of Biology, University of Turku, Finland. The course covers many aspects of traditional and modern molecular, synthetic and cellular biology with the goal of exposing students to real research questions. The course covers gene manipulation, optogenetics, cellular and animal models, bioprocessing, drug discovery and high-throughput/high-content screening (the latter 2 subjects taught by Prof Matthias Ness). These courses are intended for advanced undergraduate and graduate students, including PhD students and postdocs.
- Since 2014 Lecturer for the course on Laboratory Animal Science Course with lecture "**Non-animal Models**",
- Since 2015 **Lecturer** of ***Controlling cells at will*** and ***Gene Editing Technologies*** to undergraduate and PhD students at the Department of Biology, University of Turku, Finland.
- 2015 **Invited speaker** at the 8th Symposium of the Polish Bioinformatics Society, 17-19 September. Lublin, Poland.
- 2015 **Invited speaker** at the Finnish National Infrastructure for Genome Editing Technology seminar, Turku.
- 2015 **Organiser and panel discussion moderator** at the CRISPR revolution meeting, organised by TuBS that was held on November 30th in Turku, Finland.
- Since 2015 Teaching **Biochemistry and Molecular Biology** to undergraduate Medical students from USA, Norway, Sweden, Saudi Arabia, Taiwan, Thailand and South Korea of the International Programme at the Medical University of Lublin, Poland (60 teaching hours per year).
- Since 2015 **Lecturer and programme organiser** of the degree on *Biomedicine* at the Medical University of Lublin. This undergraduate degree course is the first of its kind in Poland and it began in September 2015. My responsibility is to **plan and execute the lectures and practical courses** on Molecular Biology and Biochemistry.
- 2014 Invited as a **main speaker** during the opening ceremony of the Centre for Experimental Medicine, at the Medical University of Lublin, Poland.
- Since 2018 **Lecturer and course organiser** of the Master degree on *Biomedicine* at the Medical University of Lublin. This master degree course is the first of its kind in Poland and it

began in September 2018. My responsibility is to **plan and execute** the **lectures** on different scientific topics including animal models, cell signalling and elective lectures.

Since 2018 **Coordinator of the Molecular Biology** section of the Biomedicine Bachelor's degree, Medical University of Lublin.

All my lectures and courses at Turku University have been uploaded in the University of Turku's **web-based system** (Worksmates) for students' perusal. Likewise, all my lectures at Åbo Akademi University have been uploaded to the **web-based system Moodle**.

My teaching performance has been evaluated during my sample lecture for the Adjunct and Associate Professor titles at both Åbo Akademi and Turku Universities, respectively. Evaluation results were "good" and "excellent", respectively.

My *habilitation* work, where my research and teaching performance was carefully evaluated, was considered "excellent" (96%) by the Medical University of Lublin board.

Although I have never attended a pedagogical course, I have been teaching since I was a PhD student at the University of Surrey, UK, as part of my PhD training. Since then I have taught graduate and PhD students and my evaluations have been very positive. I like teaching for a variety of reasons, first because I like to chat with young students, always refreshing. Second because one needs to go "back to basics" and find easy ways to explain complex phenomena like most of those taking place inside cells. Finally, because I believe that transmitting my personal experiences and my passion for science, can inspire and help them to undertake the challenges that lie ahead.

My interest in science has no borders and I was happy when I got invited to write the National book on Chemistry of my own Country (Mexico). It was a challenge also but very inspiring as the many subjects in Chemistry are based in Biology and vice versa.

Presentation awards

2007 **Best oral presentation** award by the Finnish endocrine society (Finnish endocrine society annual meeting, Helsinki, Finland).

2009 **Exceptional Research** Award by the Endocrine Society (ENDO meeting, Toronto, Canada).

2010 European Endocrine Meeting, Oral Communications section: **Highlights**. ECE2010. Prague, Czech Republic 24-28 April.

ADMINISTRATION ACTIVITIES

Development of Scientific courses, I have organised courses and help to organise an entire new Bachelor's degree (Biomedicine). **Assessment** of student performance.

Arranging exams and timetables. Reporting students' results to the Department.

Creation, management and delivery of projects for undergraduate, Master and PhD students.

Dealing with the **formalities** of exchange programmes (e.g. Erasmus) and the **accreditation** of study points.

Financial reporting to foundations that have supported my research.

LEADERSHIP AND SUPERVISION

Currently supervising four PhD students:

One in Finland, Valeriy Paramonov, at the Institute of Biomedicine, University of Turku, Finland.

Two first-year PhD students (Johanna Kałafut and Kamila Szymańska), one 2nd year PhD student (Jakub Czapiński) in my group at the Department of Biochemistry and Molecular Biology, Medical University of Lublin, Lublin, Poland.

I have **three post-doctoral fellows** (Michał Kiełbus, Lidia Borkiewicz and Karolina Dudziak) and **several undergraduate medical student**, and three Master degree student of biomedicine in my group at Medical University of Lublin, Poland.

Graduated PhD students:

[Ashutosh Trehan](#), had his examination on the 23rd of September 2016 at the University of Turku, Finland. He graduated with three publications (Trehan *et al* Cell Communication and Signaling 2014, Trehan *et al* Scientific Reports 2016, Potorac *et al* J Endocrinol 2016), one more article published after his PhD (Potorac *et al* Eur J Endocrinol 2018), and two more manuscripts are in process. He is currently a postdoctoral fellow in the lab of Dr Patrycja Kozik, Cambridge University, UK.

Supervisor or co-supervisor of master students and undergraduate students from the Master degree in Bioimaging, Åbo Akademi University (School of Natural Sciences), and University of Turku (School of Biology), Finland. Adeleke Amoda's **Master thesis** (Bioimaging programme) has been successfully defended in August 2016. The title of this Master Thesis is "*Fused diatom based osteoconductive scaffold for bone grafting applications and cell growth platforms*". I was his **co-supervisor**.

Master students of Biomedicine (Lublin). 2019-2020 Małgorzata Wilk and Martyna Kuchta.

Immanuel Sanka, graduate student. **Co-supervisor** in a collaboration between Åbo Akademi University, Finland, and Gadjah Mada University (Faculty of Biology), Indonesia. He is currently at Uppsala University in Sweden, attending a master degree course on Applied Biotechnology.

I have also supervised 3 Erasmus students. Also a visiting exchange Master student (Ismael Alejandro Rodriguez-Rodriguez) from the department of pharmacy at the Monterrey National University, Mexico.

Bachelor students of Biomedicine, Medical University of Lublin, who have graduated with theses under my supervision:

2018-2019: Jakub Adamczyk and Katarzyna Gębarowska.

2019-2020: Maksymilian Grzelak, Maria Pazdyga, Konrad Murat, and Magdalena Śliwińska.

I have **supervised** and provided **pastoral support to PhD and Master students** during all of my courses.

My lab in Lublin has biweekly lab meetings to assess the progress of the different projects. Every 2 months we have departmental meetings where students and postdocs present the results of their experiments.

Co-organiser of the **Science Club** between the Medical University of Lublin, the University of Life Sciences, and the Marie Curie Skłodowska University, all in Lublin, Poland. The goal is to promote interdisciplinary research. Meetings are held every three months.

MEMBER OF SCIENTIFIC EDITORIAL BOARD

Member of the **editorial board** of the journal [Reproductive Biology](#) (Elsevier).

Former member of the **editorial board** of the journal [Biochemistry and Modern Applications](#). (EdelWeiss) until 2017.

Associate Editor of [Frontiers in Cellular Biochemistry](#) (Originally part of Frontiers in Chemistry now part of Frontiers in Molecular Biosciences) until March 2018.

Member of the **PhD evaluation board** of Kimmo Isoniemi, 11.11.2016. Faculty of Natural Sciences and Engineering. Åbo Akademi University, Finland.

Member of the **PhD committee** of Lorenzo Li Greci, both from the Faculty of Natural Sciences and Engineering. Åbo Akademi University, Finland

Member of the committee for the PhD examinations of 2 PhD students (Marta Halasa and Estera Okon), Medical University of Lublin (June 2019).

SELECTED INVITED PRESENTATIONS AT CONFERENCES

2019: **Invited speaker**, MCB Diamond Seminar, "Cell Signalling in a Flash". Małopolskie Centrum Biotechnologii, Cracow, 10th December.

2019: **Invited speaker**, Le Studium, Targeting GPCR to generate life, preserve the environment and improve animal breeding: technological challenges. Tours France 16-18 October.

2019: **Invited speaker**, International Research Alumni Symposium, Technical University of Dresden, 14-19 June. Dresden, Germany.

2019: **Invited speaker** to an open seminar organised by *Boost Biotech*, 9th of May in Lublin, Poland.

2018: **Invited speaker** to the 5th Lublin International Medical Congress for Students and Young Doctors. Medical University of Lublin, Lublin, Poland 30.11-01.12-2018.

2018: **Invited speaker** to the *New Frontiers In Endocrinology* series. Section of Endocrinology, Modena University-Hospital, Italy.

2018: **Invited speaker** to the CLASS seminar series, University College Dublin, Conway Institute, Dublin, Ireland. 1-2 of May 2018.

2018: Invited speaker to the "Open Day", Medical University of Lublin. 12/April/2018.

2017: **Invited speaker for 2 lectures**, 3rd Alumni Meeting, Technical University of Dresden, 9-14 September. Dresden, Germany.

2017: **Invited keynote speaker** and **session Chairperson** at the ICGR-IV, International Conference on Gonadotropins and Receptors. 20-23 September. Modena, Italy.

2015: **Main speaker** at the 8th Symposium of the [Polish Bioinformatics Society](#). 17-19 September, Lublin (Poland).

2015: **Invited speaker** at the Finnish [National Infrastructure for Genome Editing Technology](#) seminar. Turku, Finland.

2010: **Highlight lecture** at [European Endocrine Meeting](#), Oral Communications section selection: "ECE2010. Prague, Czech Republic 24-28 April.

2007: **Best oral presentation** award by the Finnish endocrine society (Finnish endocrine society annual meeting), Helsinki, Finland.

2007: **Exceptional Research** Award by the Endocrine Society (ENDO meeting), Toronto, Canada.

2005: **Invited speaker**, Summer School on Endocrinology, Bregenz, Austria.

ORGANISATION OF CONFERENCES

Organiser and panel moderator at the TuBS meeting on [THE CRISPR/CAS REVOLUTION](#). November 30, 2015.

ASSOCIATIONS & MEMBERSHIPS

Foreign Member of the Polish Academy of Sciences (Polska Akademia Nauk, PAN), Lublin branch.

External reviewer for the Polish National Science Centre (NCN), Poland.

External reviewer of the North West Cancer Research Foundation, United Kingdom.

Reviewer of the AgreenSkills and AgreenSkills+ programmes, coordinated by INRA, the French National Institute for Agricultural Research, with the collaboration of Agreenium. Both programmes are co-funded by the **European Union's Seventh Framework Programme** for research, technological development and demonstration under grant agreement numbers FP7-267196 and FP7-609398, respectively.

Reviewer for Scientific Reports, Molecular and Cellular Endocrinology, BioTechniques, BMC Molecular Biology, Chemical Research in Toxicology, Biotechniques, FEBS Letters, PLoS ONE, among other journals.
(<https://publons.com/author/441882/adolfo-rivero-muller#profile>)

Reviewer of the **PLOS iGEM** (International Genetically Engineered Machine) Peer Review Jamboree in 2017.

Reviewer of the ERC (European Research Council) Panel LS9 (Applied life Sciences and Non-Medical Biotechnology) of the Consolidator Grant.

Reviewer for the South Africa's National Research Foundation (NRF).

PhD thesis reviewer, Imrul Faisal, Faculty of Medicine, University of Helsinki, Finland. Graduated on 18th May 2018. ISBN:978-951-51-4119-4 (<https://helda.helsinki.fi/handle/10138/234445>).

IN THE NEWS

Articles highlighted in different media:

Rivero-Muller et al (2010) PNAS. **Recommended by** [Faculty1000](#).

Highlighted in: [Science Signaling](#), [PNAS](#), and [Trends in Biochemical Sciences](#).

Rahman et al (2012) FASEB J. **Recommended by Faculty 1000** (*Burger H: 2011*. <https://f1000.com/prime/13339994>).

Trehan et al (2016) Sci Rep. **Highlighted by** [Addgene](#)

Potorac et al (2016) J Endocrinol. **Cover image** of the *Journal's print version* (<http://joe.endocrinology-journals.org/content/233/1.cover-expansion>).

Award for the best publication in 5-journals of the Society of Endocrinology
<http://biosci.msgfocus.com/q/121D4wPIgchttJw6lQGY/wv>

On TV

Local TVP3 Lublin interview (broadcasted on 28 and 29/Nov/2017):

<https://lublin.tvp.pl/34992370/28-listopada-2017>

Local TVP3 Lublin interview (broadcasted on 12/Dec/2017):

<http://lublin.tvp.pl/35184273/12-grudnia-2017>

On international students

https://lublin.tvp.pl/1650776/zdarzenia-magazyn-reporterow?fbclid=IwAR1P_ubx8KpJKT31f8wVTvbAkyP3V-896YxL3xfDO60lypC-AEi_AF6U19A

Radio (on FORUM) (in Polish mostly):

<https://lublin.eska.pl/rusza-lubelskie-forum-naukowe-pierwszy-wyklad-na-temat-covid-19-audio-rozmowa-aa-HB45-1z4J-3jT7.html>

LANGUAGE SKILLS

Fluent in Spanish and English. Level 3 in Swedish at Åbo Akademi University. Basic Polish.

FUNDED RESEARCH

The Sigrid Jusélius Foundation 2013 Co-applicant, main applicant Ilpo Huhtaniemi.

The Sigrid Jusélius Foundation 2010 Co-applicant, main applicant Ilpo Huhtaniemi.

Ahokas Foundation, Finland 2012 (applicant).

TuBS (Turku Doctoral Programme of Biomedical Sciences) (supervisor of applicant).

Turun Yliopistosäätiö (Turku University Foundation) 2015 (applicant).

National Science Centre (NCN), Poland, OPUS 2015 (applicant).

National Science Centre (NCN), Poland, Miniatura 2017 (supervisor of applicant).

National Science Centre (NCN), Poland, OPUS 2017 (applicant).

Preludium (NCN), Poland.: DEC-2018 (Kamila Szymanska) (supervisor of applicant).

NAWA (Narodowa Agencja Wymiany Akademickiej) International Academic Partnership (Lublin/Heidelberg/Turku/Helsinki/Chicago – POLFINGERS, 2019-2021) (co-main applicant)

PUBLICATIONS

ARTICLES IN REFEREED SCIENTIFIC JOURNALS

1. Sumano H, Gracia I, Capistrán A, Meade G, **Rivero A**, Ruiz-Ramírez L. (1995) Use of ambroxol and bromhexine as mucolytics for enhanced diffusion of furaltadone into tracheobronchial secretions in broilers. **Br Poult Sci.** 36(3):503-7.
2. DeVizcaya-Ruiz, A., **Rivero-Müller, A.**, Ruiz-Ramirez, L., Kass, G.E.N., Kelland, L.R., Orr, R.M. and Dobrota, M. (2000). Induction of Apoptosis by a Novel Copper-based Anticancer Compound – Casiopeina II in L1210 and CH1 Cells. **Toxicology in Vitro** 14: 1-5.
3. Tran SE, Meinander A, Holmstrom TH, **Rivero-Müller A**, Heiskanen KM, Linnau EK, Courtney MJ, Mosser DD, Sistonen L, Eriksson JE. (2003) Heat stress downregulates FLIP and sensitizes cells to Fas receptor-mediated apoptosis. **Cell Death Differ** 10(10):1137-47.
4. De Vizcaya-Ruiz A, **Rivero-Müller A**, Ruiz-Ramirez L, Howarth JA, Dobrota M. (2003). Hematotoxicity response in rats by the novel copper-based anticancer agent: casiopeina II. **Toxicology** 194(1-2):103-13.
5. Rahman NA, Kiiveri S, **Rivero-Müller A**, Levallet J, Vierre S, Kero J, Wilson DB, Heikinheimo M, Huhtaniemi I. (2004) Adrenocortical tumorigenesis in transgenic mice expressing the inhibin {alpha}-subunit promoter/SV40 virus T-antigen transgene: Relationship between ectopic expression of luteinizing hormone receptor and transcription factor GATA-4. **Mol Endocrinol** 18(10):2553-6.
6. Bodek G, Vierre S, **Rivero-Müller A**, Huhtaniemi I, Ziecik AJ, and Rahman NA (2005) A novel targeted therapy of Leydig and granulosa cell tumors through the luteinizing hormone receptor using a hecate-chorionic gonadotropin- β conjugate in transgenic mice. **Neoplasia** 7(5) 497-508.
7. Wang Y, Suominen JS, Parvinen M, **Rivero-Müller A**, Kiiveri S, Heikinheimo M, Robbins I, Toppari J (2005) The regulated expression of c-IAP1 and c-IAP2 during the rat seminiferous epithelial cycle plays a role in the protection of germ cells from Fas-mediated apoptosis. **Mol Cell Endocrinol** 245(1-2): 111-120.

8. **Rivero-Müller A**, De Vizcaya-Ruiz A, Plant N, Ruiz L, Dobrota M (2006) Mixed chelate copper complex, Casiopeina IIgly, binds and degrades nucleic acids: A mechanism of cytotoxicity. **Chem Biol Interact** 165(3):189-99.

**Corresponding author*

9. Waclawik A, **Rivero-Müller A**, Blitek A, Kaczmarek MM, Brokken LJ, Watanabe K, Rahman NA, Ziecik AJ (2006) Molecular cloning and spatiotemporal expression of prostaglandin F synthase and microsomal prostaglandin E synthase-1 in porcine endometrium. **Endocrinology** 147(1):210-21.
10. An BS, Selva DM, Hammond GL, **Rivero-Müller A**, Rahman N, Leung PC (2006) Steroid receptor coactivator-3 is required for progesterone receptor trans-activation of target genes in response to gonadotropin-releasing hormone treatment of pituitary cells. **J Biol Chem** 281(30):20817-24.
11. Vuorenoja S, **Rivero-Müller A**, Kiiveri S, Bielinska M, Heikinheimo M, Wilson DB, Huhtaniemi IT, Rahman NA (2007) Adrenocortical tumorigenesis, luteinizing hormone receptor and transcription factors GATA-4 and GATA-6. **Mol Cell Endocrinol** 269(1-2):38-45.
12. **Rivero-Müller A**, Vuorenoja S, Tuominen M, Waclawik A, Brokken LJ, Ziecik AJ, Huhtaniemi I, Rahman NA. (2007) Use of hecate-chorionic gonadotropin beta conjugate in therapy of lutenizing hormone receptor expressing gonadal somatic cell tumors. **Mol Cell Endocrinol** 269(1-2):17-25.
13. **Rivero-Müller A**, Lajić S, Huhtaniemi I. (2007) Assisted Large Fragment Insertion by Red/ET-recombination (AL-FIRE) - An Alternative and Enhanced Method for Large Fragment Recombineering. **Nucleic Acids Research** 35(10):e78. DOI 10.1093/nar/gkm250.

**Corresponding author*

14. Vuorenoja S, **Rivero-Müller A**, Ziecik AJ, Huhtaniemi I, Toppari J, Rahman NA. (2008) Targeted therapy for adrenocortical tumors in transgenic mice through their LH receptor by Hecate-human chorionic gonadotropin beta conjugate. **Endocr Relat Cancer** 15(2):635-48. DOI: 10.1677/ERC-08-0015.
15. Peuhu E, **Rivero-Müller A**, Stykki H, Torvaldson E, Holmbom T, Eklund P, Unkila M, Sjöholm R, Eriksson J E. (2010) Inhibition of Akt signaling by the lignan matairesinol sensitizes prostate cancer cells to TRAIL-induced apoptosis. **Oncogene** 29(6):898-908. DOI: 10.1038/onc.2009.386.
16. **Rivero-Müller A**, Chou Y-Y, Ji I, Lajic S, Hanyaloglu AC, Jonas K, Rahman N, Ji TH, Huhtaniemi I (2010) Rescue of defective G protein-coupled receptor function in vivo by intermolecular co-operation. **Proc Natl Acad Sci U S A** 107(5):2319-24. DOI 10.1073/pnas.0906695106

Recommended by:

[Faculty1000](#) as *must read*.

Highlighted in:

[Science Signaling](#), [PNAS](#), and [Trends in Biochemical Sciences](#).

17. Peltoketo H, **Rivero-Müller A**, Ahtiainen P, Poutanen M, Huhtaniemi I (2010) Consequences of genetic manipulations of gonadotrophins and gonadotrophin receptors in mice. **Ann Endocrinol (Paris)** 71(3):170-6.

18. Ahtiainen P, Sharp V, Rulli S, **Rivero-Müller A**, Mamaeva V, Røyttä M, Huhtaniemi I (2010) Enhanced LH action in transgenic female mice expressing hCG β subunit induces pituitary prolactinomas: the role of high progesterone levels. **Endocr Relat Cancer** 17: 611-621. DOI: **10.1677/ERC-10-0016**
19. Rahman NA, Coelingh Bennink HJT, Chrusciel M, Sharp V, Zimmerman Y, Dina R, Li X, Ellonen A, **Rivero-Müller A**, Dilworth S, Ghaem-Maghani S, Vainio O, Huhtaniemi I (2012) A novel treatment strategy for ovarian cancer based on immunization against zona pellucida protein (ZP) 3. **FASEB J** 26(1):324-33.

Selected by Faculty 1000 (Burger H: 2011. F1000.com/13339994).

20. Chrusciel M, Vuorenoja S, Mohanty B, **Rivero-Müller A**, Li X, Toppari J, Huhtaniemi I, and Rahman NA (2013) GATA-4 overexpression induces adrenocortical tumorigenesis in C57Bl/6N mice. **J Cell Sci** 126(8):1845-57.
21. Mäkelä J-A, Toppari J, **Rivero-Müller A**, Ventelä S (2014) Reconstruction of mouse testicular cellular microenvironments in long term seminiferous tubule culture. **PLoS ONE** 11;9(3):e90088. (DOI: 10.1371/journal.pone.0090088)
22. Guz M, **Rivero-Müller A**, Okon E, Stenzel-Bembenek A, Polberg K, Slomka M, and Stepulak A (2014) MicroRNAs in lung cancer: clinical importance and potential as biomarkers. **Disease Markers** 2014:218169. doi: 10.1155/2014/218169.
23. Rotgers E, **Rivero-Müller A**, Nurmio M, Parvinen M, Guillou F, Huhtaniemi I, Kotaja N, Bourguiba-Hachemi S, Toppari J (2014) Retinoblastoma protein (RB) interacts with E2F3 to control terminal differentiation of Sertoli cells. **Cell Death and Disease** 5: e1274; doi:10.1038/cddis.2014.232.
24. Trehan A, Rotgers E, Coffey ET, Huhtaniemi I, and **Rivero-Müller A** (2014) CANDLES Assay for monitoring GPCR induced cAMP generation in cell cultures. **Cell Commun Signal** 12:70.(doi: 10.1186/s12964-014-0070-x).

**Corresponding author*

25. Waclawik A, **Rivero-Müller A**, Rahman NA, and Ziecik AJ (2015) Functional consequences of knocking down porcine prostaglandin synthases in the SK-6 swine kidney cell line. **Reprod Biol** 15(1):42-7.
26. Król SK, Kielbus M, **Rivero-Müller A**, and Stepulak A (2015) Comprehensive Review on Betulin As A Potent Anti-cancer Agent. **BioMed Res Int** 2015:584189.
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ONGOING PROJECTS

- Mesoporous **silica nanoparticles** for somatostatin-targeted Notch activation in animal model of gastroenteropancreatic tumours.

In collaboration with Prof Cecilia Sahlgren at Eindhoven University of Technology, Netherlands and the Chemistry Department of Ulm University, Germany, Prof Mika Linden.

- **Genetic manipulation** of marine diatoms' frustules shape by alteration of their silica-transporting enzymes.
- **Synthetic engineering** of spider silk

In collaboration with Dr Parvez Alam, University of Edinburgh, UK.

- Regulation of **intracellular signalling** by dimer formation between the LHCGR or FSHR and other GPCRs.

-Mutations of the glycoprotein receptors (LHCGR, FSHR, THSR), of their hormones (LHB, FSHB, or THSB) from patients suffering different degrees of gonadal development. We are trying to characterise them at the molecular level: their biosynthesis, transport, membrane localisation/secretion, and signalling responses.

In collaboration with the CHU de Liège, Université de Liège, Belgium and the University Paris Sud, France, Prof Albert Beckers and Prof Jacques Young, respectively. The THSB mutations project is a collaboration with Prof Heike Biebermann, Charité Medical University, Berlin, Germany.

- Bias Notch signalling upon differential ligand activation during **vasculature remodelling**.

In collaboration with Prof Cecilia Sahlgren. Eindhoven University of Technology, Netherlands.

Research conducted at the Department of Biochemistry and Molecular Biology, Medical University of Lublin, Poland:

- Matrix metalloproteases (MMP) **sensors and biosensors**.
- Characterisation of **cell fate decisions** in epithelial–mesenchymal transition (EMT) and mesenchymal-epithelial transition (MET) stages.
- Optogenetic-Notch signalling, where Notch receptors have been converted to **synthetic light-activated signalling molecules** to regulate cell differentiation and eventually tissue engineering.
- A **synthetic circuit** to detect cellular processes.

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