BIOGRAPHICAL SKETCH

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NAME	POSITION TITLE
Agoulnik, Alexander I	Professor
eRA COMMONS USER NAME (credential, e.g., agency login) AGOULNIK	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	MM/YY	FIELD OF STUDY
Novosibirsk State University, USSR	M.S.	05/1980	Cytology and Genetics
Institute of Cytology and Genetics , USSR	Ph.D.	1987	Genetics
Institute of Cytology and Genetics, USSR	Postdoc	1990	Genetics
Max-Planck Intitut für Biologie, Abteilung Immungenetik, Tübingen, Germany	Postdoc	1992	Molecular Biology

A. Personal Statement

The current studies in my laboratory are based on the long-time interest in biology of reproduction and the endocrine effects on reproductive organ development. For more than 15 years we studied the process of testicular descent and effect of Leydig cell produced androgen and INSL3 hormones. Analysis of various mutant mice led to an identification of GPCR receptor for INSL3. It was shown later that homologous receptor was involved in relaxin signaling. Through collaboration with NCATS we have identified the first small molecule agonists of relaxin receptors. The three projects funded by NIH, pharmaceutical partner and the Florida Department of Health aim to develop the small molecule agonist and antagonists as a therapeutic candidates. The work covers the broad spectrum of studies on molecular level, cell signaling and the production and analysis of transgenic mice with humanized version of relaxin receptor. The projects are highly collaborative and I have a proven track of leadership, publication records, and teaching experience. As the Graduate Program Director at College of Medicine I am involved in every aspect of training of new generation of scientists. We have all equipment, facilities, state-of-the art labs and the strong university support to conduct the planned research. Every year we have at least 5 undergraduate students working in the lab including MBRS and RICE minority fellows, all my students go to summer internships to the leading universities (Harvard, Stanford, NIH, etc), we host a number of domestic and international graduate students. All undergrad students graduating from the lab to date had at least one peer-review publication. We are well-positioned to train and guide students and help them to gain a research experience in various field of experimental biology.

B. Positions and Honors

Positions and Employment:

1992-1994	Instructor	Dept. Ob/Gyn, University of Tennessee, Memphis, USA
1994-1995	Senior Scientist	Promega Corp., Madison, WI.
1995-2005	Assistant Professor	Dept. of Obstetrics and Gynecology, Baylor College of
2005- 2009	Associate Professor	Medicine, Houston, TX
2009-Present	Adjunct Associate Professor	
2008-Present	Professor (Voluntary)	Dept. of Ob/Gyn, Miller School of Medicine, Univ.of Miami
2009-Present	Professor	Dept. of Human and Molecular Genetics, College of
2011-Present	Director, Graduate Program	Medicine, Florida International University, Miami, FL

Other Experience and Professional Memberships

1998,2003 Ad Hoc Reviewer, NIH, Special Urology Emphasis Panel
2005 Ad Hoc Reviewer, Canadian Institute of Health Research
2007 Ad Hoc Reviewer, Manitoba Health Research Counsel, Canada
2007 Ad Hoc Reviewer, NIH, MIST Study Section
2010,2011,2012 Ad Hoc Reviewer, NIH, NICHD U54 Study Section

Full Member of AACR, SSR, Endocrine Society.

Honors

1990 Max-Planck-Institute Fellowship Award
1997 The American Society for Reproduction Medicine Prize Paper
2010 FIU Top Scholar

C. Selected Peer-reviewed Publications (selected out of 107)

1. Gorlov IP, Kamat A, Bogatcheva N, Jones E, Lamb DJ, Truong A, Bishop CE, McElreavey K, Agoulnik AI. Mutations of the GREAT gene cause cryptorchidism. *Human Mol Genetics* 2002 11(19):2309-18.
2. Bogatcheva NV, Truong A, Feng S, Engel W, Adham IM, Agoulnik AI. GREAT/LGR8 is the Only Receptor for Insulin-Like 3 Peptide. *Mol Endocrinol*. 2003; 17 (12): 2639-2646.
3. Kamat AA, Feng S, Bogatcheva NV, Truong A, Bishop CE, Agoulnik AI Genetic targeting of relaxin and Insl3 receptors in mice. *Endocrinology,* 2004, 145: 4712 – 4720.
4. Agoulnik AI. Mouse Mutants of Relaxin, Insulin-Like 3 Peptide, and Their Receptors. *Current Medicinal Chemistry-Immunology, Endocrine and Metabolic Agents*, 2005, 5:411-419.
5. Feng S, Bogatcheva NV, Kamat AA, Truong A, Agoulnik AI. Endocrine effects of relaxin overexpression in mice.*Endocrinology*. 2006;147(1):407-14.
6. Bogatcheva NV, Ferlin A, Feng S, Truong A, Gianesello L, Foresta C, Agoulnik AI. T222P mutation of the insulin-like 3 hormone receptor LGR8 is associated with testicular maldescent and hinders receptor expression on the cell surface membrane. *Am J Physiol Endocrinol Metab*. 2007;292(1):E138-44.
7. Agoulnik AI. Relaxin and related peptides in male reproduction. Adv Exp Med Biol. 2007;612:49-64.
8. Ferlin A, Pepe A, Gianesello L, Garolla A, Feng S, Giannini S, Zaccolo M, Facciolli A, Morello R, Agoulnik AI, Foresta C. Mutations in insulin-like factor 3 receptor are associated with osteoporosis. *JBMR*, 2008, 23(5):683-93.
9. Kaftanovskaya EM, Feng S, Huang Z, Tan Y, Barbara AM, Kaur S, Truong A, Gorlov IP, Agoulnik AI. Suppression of Insulin-like3 receptor reveals the role of β-catenin and Notch signaling in gubernaculum development. *Mol Endocrinol.* 2011;25(1):170-83.
10. Li Z, Feng S, Lopez V, Elhammady G, Anderson ML, Kaftanovskaya EM, Agoulnik AI. Uterine cysts in Female Mice Deficient for Caveolin-1 and Insulin-like3 Receptor RXFP2. *Endocrinology*, 2011, 152(6):2474-82.
11. Kaftanovskaya EM, Huang Z, Barbara AM, De Gendt K, Verhoeven G, Gorlov IP, Agoulnik AI. Cryptorchidism in mice with an ablation of androgen receptor in gubernaculum testis. *Mol. Endocrinol*. 2012. 26(4):598-607. (Featured in Endocrine News).
12. Larson G, Karlsson E, Perri A, Webster MT, Simon Y. W. Ho, Peters J, Stah PW, Piper PJ, Lingaas F, Fredholm M, Comstock KE, Modiano JF, Schelling C, Agoulnik AI, Leegwater P, Dobney K, Vigne J-D, Vilà C, Andersson L, Lindblad-Toh K. A new genetic, archeological, and biogeographic perspective on dog domestication, *PNAS*, 2012. 2012 Jun 5;109(23):8878-83.
13. Huang Z, Rivas B, Agoulnik AI. Insulin-like 3 signaling is important for testicular descent but dispensable for spermatogenesis and germ cell survival in adult mice. *Biology of Reproduction.* 2012 87 (6) 143, 1-8.
14. Kaftanovskaya EM, Neukirchner G, Huff V, Agoulnik AI. Left-sided cryptorchidism in mice with Wilms Tumour 1 gene deletion in gubernaculum testis. *J Pathol*. 2013. May;230(1):39-47.
15. Ferguson L, Agoulnik AI. Testicular cancer and cryptorchidism. *Frontiers Endocrinology*. 2013. 4:32.
16. Hodgson MC, VanOstran G, Alghamdi S, Poppiti RJ, Agoulnik AI, Agoulnik IU. Reduced Androgen Receptor Expression Accelerates the Onset of ERBB2 Induced Breast Tumors in Female Mice. *PLOS One*. 2013. Apr 8;8(4). PMID: 23593223.
17. Xiao J, Huang Z, Chen CZ, Agoulnik IU, Southall N, Hu X, Jones RE, Ferrer M, Zheng W, Agoulnik AI*, Marugan JJ*. (*Corresponding authors). Identification and optimization of small-molecule agonists of the human relaxin hormone receptor RXFP1. *Nat Commun*. 2013 Jun 14;4:1953.
18. Huang Z, Rivas B, Agoulnik AI. NOTCH1 Gain of Function in Germ Cells Causes Failure of Spermatogenesis in Male Mice. *PLOS One*. 2013.July 30, 10.1371/journal.pone.0071213

19. Ferguson L, How J, Agoulnik AI. The fate of spermatogonial stem cells in the cryptorchid testes of RXFP2 deficient mice. *PLOS One.* 2013. Oct 3;8(10):e77351. doi: 10.1371/journal.pone.0077351. PMID:24098584

D. Research Support

Ongoing Research Support

Cooperative Research and Development Agreement (CRADA) 5/1/ 2014 – 5/1/2016
(PI: AI Agoulnik)
Agency: Bristol-Myers Squibb
Title: "Small Molecule RXFP1 Agonists as Novel Therapeutics"
Goals: Small molecule compounds which activate RXFP1 were recently identified by NCATS/NIH and FIU. Using these compounds as potential leads, BMS will be collaborating with NCATS/NIH and FIU to develop a novel therapeutic suitable for the treatment of chronic heart failure and other fibrotic diseases.
No overlap with the current proposal.

1U01CA177711-01 (PI: AI Agoulnik) 9/17/2013-8/31/2015
Agency: NIH/NCI
Title: "Small molecule antagonists of relaxin receptor"
Goals: We have shown that the inhibition of relaxin hormone signaling suppresses prostate cancer progression. We will perform a high throughput screening of a large library of small molecules to isolate chemical compounds that disrupt relaxin signaling and can be potentially used as the anti-cancer drugs.
No overlap with the current proposal.

3KF01 (PI: AI Agoulnik) 9/1/2013-12/31/2014
Agency: Florida Department of Health, James and Esther King Biomedical Research Program
Title: "Vascular effects of small molecule agonists of relaxin receptor"
Goals: The main goal is to analyze vascular effects of small molecule agonists in novel mouse transgenic model with humanized relaxin receptor.
No overlap with the current proposal.

Completed Research Support (last 3 years)

None of the grants has the overlap with the current application.

5R21HL093605-02 (PI: Kirk Conrad, University of Florida; Subcontract PI: AI Agoulnik)
Agency: NIH/NHLBI 6/1/2009-5/30/2013
Title: "Mechanisms of renal vasodilation by relaxin"

FIU Pilot Award (PI: AI Agoulnik) 7/1/2012-6/30/2013
Title: "Small molecule agonists of relaxin receptor"

1R21HD059951-01 (PI: AI Agoulnik) 1/1/ 2009-12/31/2011
Agency: NIH/NICHD
Title: "Role of Y chromosomal genes in male fertility"

1R03MH085705-01A1 (PI: AI Agoulnik) 7/30/2009- 8/1/2011
Agency: NIH/NIMH
Title: "Small molecule agonists of the relaxin receptor"

BC097064 (PI: IU Agoulnik, Role:Co-PI) 10/1/2010-9/30/2011
Agency: Department of Defense
Title: Androgen regulation of novel tumor suppressor in male and female breast cancer.

1R21CA129265-01 (PI:IU Agoulnik, Role: Investigator) 4/1/2008-9/31/2011
Agency NIH/NCI
Title: Role of NCoR1 in Antiandrogen Resistance in Prostate Cancer

R01 HD37067 (PI: AI Agoulnik) 6/1/2000-12/31/2010
Agency NIH/NICHD
Title: “Genetic control of early testicular descent”