

## ROBERTO GIOVANNONI - BIOGRAPHICAL SKETCH

NAME Roberto Giovannoni	POSITION TITLE Assistant Professor, Pathology and Immunology, University of Milano-Bicocca ( <a href="http://www.unimib.it">www.unimib.it</a> )
Date and place of birth: July 7, 1974 Saronno, Italy	Citizenship: Italian
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### EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
University of Milan, Milan, Italy	B.Sc.	1995-2001	Biological Sciences
AISAL Training Course "Science and Medicine of Laboratory Animals"–Cat. C (Researchers)/FELASA.		2003	Laboratory Animal Science
University of Milano-Bicocca, Milan, Italy	Ph.D.	2003-2006	Biotechnology

### Academic, teaching and research appointments:

2001-2002	Post-graduate fellowship at the Stem Cell Research Institute (SCRI) – Dibit Ospedale San Raffaele
2002-2003	Post-graduate fellowship at the Department of Experimental Medicine & Biotechnology, University of Milano-Bicocca
2002-2004	Principal Investigator of Telethon Project #GSP010316 “Pathogenesis of polyglutamine disorders: Transgenic models”
2003-2004	Fellowship at the Department Experimental Medicine & Biotechnology, University of Milano-Bicocca
2004 to present	Research Staff Scientist at the Molecular Medicine Laboratory – Dept. Surgical Sciences, University of Milano-Bicocca
2004 to present	Participating Scientist at the PhD Program in Translational and Molecular Medicine – University of Milano-Bicocca
2004 to present	Assistant Professor of Pathology & Immunology at School of Medicine – University of Milano-Bicocca
2005 to present	Head of Laboratory of Animal Models at the School of Medicine and Surgery, University of Milano-Bicocca
2006	External referee at the Thesis Commission of the Programa de Doctorat: Antropologia Biològica, Universitat de Barcelona.
2010-2013	Co-owner and consultant at BiOnSil srl, spin-off of the University of Milano-Bicocca
2005-2008	Professor of “Genetic Engineering in Experimental Models” at School of Medicine – University of Milano-Bicocca
2008-2011	Professor of “In Vivo Techniques” at School of Medicine – University of Milano-Bicocca
2011-to present	Professor of “Molecular Mechanisms of Diseases” at School of Medicine – University of Milano-Bicocca
2014 to present	Scientific Member of the Local Committee for Animal Welfare according to European Directive 2010/63/UE and Italian D.Lgs. 26/2014 on the protection of animals used for scientific purposes

**Assignments:**

Head of Animal Models Lab

Appointed member of the International Who's Who Society, Professional Educators

Member of International Society for Transgenic Technologies since 2008

Member of European Atherosclerosis Society since 2010

Member of Italian Association of Animal Laboratory Science (AISAL) since 2013

Member of the Basel Declaration Society since 2013

Member of the American Society for Investigative Pathology (ASIP) since 2015

**Areas of interest:**

Molecular and Translational Medicine; In vivo models development

**Participation to research projects:**

Dr. Giovannoni participated to research projects funded by Italian Ministry of Research and University (PRIN2002: "Characterization of a novel conditional transgenic mouse model of spinocerebellar ataxia for the study of neuronal degeneration"; PRIN2004: "Role of protective genes in the pathogenesis of inflammatory response following vascular injury and in the prevention of intimal hyperplasia in a carotid balloon injury model in healthy and atherosclerotic pigs"; FIRB: "Molecular Medicine and Animal Biotechnologies for Successful Organ Transplantation: Study of Hyperacute Rejection and Chronic Rejection in Allo- and Xeno-Transplantation and Possible Therapeutic Approaches"; PON2011: "Novel nanotech strategies for development of drugs and diagnostics for targeting of circulating cancer cells") and by Italian Ministry of Health (Ricerca Finalizzata 2001: "Molecular approach to the study of genes involved in the regulation of cognitive functions"; Ricerca Finalizzata 2002: "Role of excitotoxic mechanisms in neurodegenerative diseases: study in in vitro human cellular models and in transgenic animals"; Ricerca Finalizzata 2011: "Targeted Multistage Vector (MSV) for the diagnosis and treatment of solid tumors"). Dr. Giovannoni participated to research project funded by European Union in the frame of FP6 program (FP6 n. LSHB-CT-2006-037377).

Dr. Giovannoni was also owner and consultant of a spin-off company (BiOnSil srl) aimed to the development and commercialization of diagnostic tools for colon cancer disease. Dr. Giovannoni was responsible, at BiOnSil srl, for the activities related to the in vivo (in rodent models of cancer) testing and validation of therapeutic as well as diagnostic tools.

**Funding:**

Dr. Giovannoni research work has been funded by Telethon (Project GSP010316: "Pathogenesis of polyglutamine disorders: Transgenic models").

**Scientific interests:**

Dr. Giovannoni has focused his research activity mainly on the production and characterization of experimental in vivo models for human diseases. The investigation of pathogenesis of human diseases in experimental models has been carried out in the following research projects:

-Study of molecular and diagnostic markers in cancer biology (Romano et al, *Oncotarget*, 2016; Giovannoni et al, *Hepatology*, 2016; Grassilli et al, *Oncogene*, 2016; Agostini et al, *Cancer Biol Ther*, 2015; Grassilli et al, *PLoS ONE*, 2014; Grassilli et al, *Clin Cancer Res*, 2013)

-Study of the role of nitric oxide and heme oxygenase-1 in the prevention of intimal hyperplasia development in an in vivo model and in vitro on vascular smooth muscle cells (Cerrito et al, *Biol Pharm Bull*, 2011; Scagliarini et al, *Basic Clin Pharm Toxicol*, 2008)

-Study of the effects of statins on the systemic inflammation induced by hypercholesterolemic diet in a pre-clinical swine model of vascular injury (Busnelli et al, *PLoS ONE*, 2013; Busnelli et al, *Atherosclerosis*, 2009)

-Production of hCD55-transgenic pigs for xenotransplantation studies (Lavitrano et al, *Methods Mol Biol*; 2013; Bacci et al, *Theriogenology*, 2009; Smolenski et al, *Cardiovasc Res*, 2007; Lavitrano et al, *Reprod Fertil Dev*, 2006; Lavitrano et al, *PNAS*, 2002)

-Production of pre-clinical animal models for the study of ischemia-reperfusion injury (Andria et al, *PLoS ONE*, 2013; Lavitrano et al, *FASEB J*, 2004)

- Production of multi-gene transgenic pigs for xenotransplantation studies (Cinti et al, *PLoS ONE*, 2015; De Giorgi et al, *Plasmid*, 2015; De Giorgi et al, *Nucleosides Nucleotides Nucleic Acids*, 2014; Vargiolu et al, *Transpl Proc*, 2010; Webster et al, *Mol Reprod Dev*, 2005)
- Vectors for transgenesis: a) use of non-viral episomal vectors to genetically modify animals (Manzini et al, *PNAS*, 2006); b) use of adeno-associated vectors for retino-specific gene therapy in pre-clinical animal models (Mussolino et al, *Gene Ther*, 2011)
- Production of TET-conditional transgenic mouse models for the study of neurodegenerative disorders (Giovannoni et al, *Neuron Glia Biology*, 2007; Canzoniere et al, *J Neurosci*, 2004)

#### Patents:

- Cerrito MG, **Giovannoni R**, Grassilli E, Lavitrano M, Masiero L, Pisano F, et al. (2014) METHODS OF TREATING CANCERS. Patent No. PCT/EP2014/066724.
- Cerrito MG, **Giovannoni R**, Grassilli E, Lavitrano M, Masiero L, Pisano F, et al. (2013) PHARMACEUTICAL KIT FOR USE IN THE TREATMENT OF COLON AND COLORECTAL CANCER. Patent No. EP2013179049.5.

#### Publications:

1. Romano G, Santi L, Bianco MR, Giuffrè MR, Pettinato M, Bugarin C, Garanzini C, Savarese L, Leoni S, Cerrito MG, Leone BE, Gaipa G, Grassilli E, Papa M, Lavitrano M, **Giovannoni R**. The TGF- $\beta$  pathway is activated by 5-fluorouracil treatment in drug resistant colorectal carcinoma cells. *Oncotarget*. 2016. DOI: 10.18632/oncotarget.7895  
IF: 6,359
2. **Giovannoni R**, Villanueva A. Circulating tumor cells and cholangiocarcinoma. *Hepatology*. 2016;63(1):23-5.  
IF: 11,055
3. Grassilli E, Pisano F, Cialdella A, Bonomo S, Missaglia C, Cerrito MG, Masiero L, Ianzano L, Giordano F, Cicirelli V, Narloch R, D'Amato F, Noli B, Ferri GL, Leone BE, Stanta G, Bonin S, Helin K, **Giovannoni R**, Lavitrano M. A novel oncogenic BTK isoform is overexpressed in colon cancers and required for RAS-mediated transformation. *Oncogene*. 2016. doi: 10.1038/onc.2015.504.  
IF: 8,459
4. Cinti A, De Giorgi M, Chisci E, Arena C, Galimberti G, Farina L, Bugarin C, Rivolta I, Gaipa G, Smolenski RT, Cerrito MG, Lavitrano M, **Giovannoni R**. Simultaneous overexpression of functional human HO-1, E5NT and ENTPD1 protects murine fibroblasts against TNF- $\alpha$ -induced injury *in vitro*. *PLoS ONE*. 2015. 10(10):e0141933.  
IF: 3,234
5. Agostini M, Zangrando A, Pastrello C, D'Angelo E, Romano G, **Giovannoni R**, Giordan M, Maretto I, Bedin C, Zanon C, Digito M, Esposito G, Mescoli C, Lavitrano M, Rizzolio F, Jurisica I, Giordano A, Pucciarelli S, Nitti D. A functional biological network centered on XRCC3: a new possible marker of chemoradiotherapy resistance in rectal cancer patients. *Cancer Biol Ther*. 2015;16(8):1160-71.  
IF: 3,072
6. De Giorgi M, Cinti A, Pelikant-Malecka I, Chisci E, Lavitrano M, **Giovannoni R**, Smolenski RT. Co-expression of functional human Heme Oxygenase 1, Ecto-5'-Nucleotidase and ecto-nucleoside triphosphate diphosphohydrolase-1 by "self-cleaving" 2A peptide system. *Plasmid*. 2015;79:22-9.  
IF: 1,578
7. Bugiardini E, Rivolta I, Binda A, Soriano Caminero A, Cirillo F, Cinti A, **Giovannoni R**, Botta A, Cardani R, Wicklund MP, Meola G. SCN4A mutation as modifying factor of myotonic dystrophy type 2 phenotype. *Neuromuscul Disord*. 2015;25(4):301-7.  
IF: 2,368
8. Grassilli E, Ianzano L, Bonomo S, Missaglia C, Cerrito MG, **Giovannoni R**, Masiero L, Lavitrano M. GSK3A Is Redundant with GSK3B in Modulating Drug Resistance and Chemotherapy-Induced Necroptosis. *PLoS One*. 2014;9(7):e100947.  
IF: 3,234
9. De Giorgi M, Pelikant-Malecka I, Sielicka A, Slominska EM, **Giovannoni R**, Cinti A, Cerrito MG, Lavitrano M, Smolenski RT. Functional Analysis of Expression of Human Ecto-Nucleoside Triphosphate Diphosphohydrolase-1 and/or Ecto-5'-Nucleotidase in Pig Endothelial Cells. *Nucleosides Nucleotides Nucleic Acids*. 2014;33(4-6):313-8.

IF: 1,018

10. Busnelli M, Manzini S, Froio A, Vargiolu A, Cerrito MG, Smolenski RT, Giunti M, Cinti A, Zannoni A, Leone BE, Forni M, Bacci ML, Biasi GM, **Giovannoni R**, Lavitrano M. Diet Induced Mild Hypercholesterolemia in Pigs: Local and Systemic Inflammation, Effects on Vascular Injury - Rescue by High-Dose Statin Treatment. *PLoS One*. 2013;8(11):e80588.  
IF: 3,234
11. Andria B, Bracco A, Attanasio C, Castaldo S, Cerrito MG, Cozzolino S, Di Napoli D, **Giovannoni R**, Mancini A, Musumeci A, Mezza E, Nasti M, Scuderi V, Staibano S, Lavitrano M, Otterbein LE, Calise F. Biliverdin protects against liver ischemia reperfusion injury in swine. *PLoS One*. 2013;8(7):e69972  
IF: 3,234
12. Grassilli E, Narloch R, Federzoni E, Ianzano L, Pisano F, **Giovannoni R**, Romano G, Masiero L, Leone BE, Bonin S, Donada M, Stanta G, Helin K, Lavitrano M. Inhibition of GSK3B bypass drug resistance of p53-null colon carcinomas by enabling necroptosis in response to chemotherapy. *Clin Cancer Res*. 2013;19(14):3820-31  
IF: 8,722
13. Tempestini A, Cassina V, Brogioli D, Ziano R, Erba S, **Giovannoni R**, Cerrito MG, Salerno D, Mantegazza F. Magnetic tweezers measurements of the nanomechanical stability of DNA against denaturation at various conditions of pH and ionic strength. *Nucleic Acids Res*. 2013;41(3):2009-19.  
IF: 9,112
14. Lavitrano M, **Giovannoni R**, Cerrito MG. Methods for sperm-mediated gene transfer. *Methods Mol Biol*. 2013;927:519-29.
15. Musumeci R, Rausa M, **Giovannoni R**, Cialdella A, Bramati S, Sibra B, Giltri G, Viganò F, Cocuzza C. Prevalence of plasmid-mediated quinolone resistance genes in uropathogenic Escherichia coli isolated in a teaching hospital of Northern Italy. *Microbial drug resistance (Larchmont, N.Y.)*. 2012;18(1):33-41.  
IF: 2,490
16. Cerrito MG, Scagliarini A, Froio A, Liloia A, Busnelli M, **Giovannoni R**, Otterbein LE, Mainetti L, Villa M, Bach FH, Leone BE, Biasi GM, Lavitrano M. Heme oxygenase-1 inhibition prevents intimal hyperplasia enhancing nitric oxide-dependent apoptosis of vascular smooth muscle cells. *Biological & pharmaceutical bulletin*. 2011; 34(8):1204-14.  
IF: 1,828
17. Mussolino C, Della Corte M, Rossi S, Viola F, Di Vicino U, Marrocco E, Neglia S, Doria M, Testa F, **Giovannoni R**, Crasta M, Giunti M, Villani E, Lavitrano M, Bacci ML, Ratiglia R, Simonelli F, Auricchio A, Surace E. AAV-mediated photoreceptor transduction of the pig cone-enriched retina. *Gene Therapy*. 2011;18(7):637-45.  
IF: 3,104
18. Vargiolu A, Manzini S, de Cecco M, Bacci ML, Forni M, Galeati G, Cerrito MG, Busnelli M, Lavitrano M, **Giovannoni R**. In vitro production of multigene transgenic blastocysts via sperm-mediated gene transfer allows rapid screening of constructs to be used in xenotransplantation experiments. *Transplantation Proceedings*. 2010;42(6):2142-5.  
IF: 0,982
19. Galli P, Strona G, **Giovannoni R**, Lavitrano M. Head glands of Monogonoidea: morphology, functionality, and potentialities in industrial production of surgery bioadhesives. *Journal of Parasitology*. 2009;95(6):1330-41.  
IF: 1,227
20. Busnelli M, Froio A, Bacci ML, Giunti M, Cerrito MG, **Giovannoni R**, Forni M, Gentilini F, Scagliarini A, Deleo G, Benatti C, Leone BE, Biasi GM, Lavitrano M. Pathogenetic role of hypercholesterolemia in a novel preclinical model of vascular injury in pigs. *Atherosclerosis*. 2009;207(2):384-90.  
IF: 3,994
21. Bacci ML, Zannoni A, De Cecco M, Fantinati P, Bernardini C, Galeati G, Spinaci M, **Giovannoni R**, Lavitrano M, Seren E, Forni M. Sperm-mediated gene transfer-treated spermatozoa maintain good quality parameters and in vitro fertilization ability in swine. *Theriogenology*. 2009;72(9):1163-70.  
IF: 1,798
22. **Giovannoni R**, Maggio N, Rosaria Bianco M, Cavaliere C, Cirillo G, Lavitrano M, Papa M. Reactive astrogliosis and glial glutamate transporter clustering are early changes in a spinocerebellar ataxia type 1 transgenic mouse model. *Neuron Glia Biology*. 2007;3(4):335-51.

23. Smolenski RT, Forni M, Maccherini M, Bacci ML, Slominska EM, Wang H, Fornasari P, **Giovannoni R**, Simeone F, Zannoni A, Frati G, Suzuki K, Yacoub MH, Lavitrano M. Reduction of hyperacute rejection and protection of metabolism and function in hearts of human decay accelerating factor (hDAF)-expressing pigs. *Cardiovascular Research*. 73(1):143-52. 2007.  
IF: 5,940
24. Manzini S, Vargiolu A, Stehle IM, Bacci ML, Cerrito MG, **Giovannoni R**, Zannoni A, Bianco MR, Forni M, Donini P, Papa M, Lipps HJ, Lavitrano M. Genetically modified pigs produced with a nonviral episomal vector. *Proceedings of National Academy of Science USA*. 103(47):17672-7. 2006.  
IF: 9,674
25. Lavitrano M, Busnelli M, Cerrito MG, **Giovannoni R**, Manzini S, and Vargiolu A. Sperm-mediated gene transfer. *Reproduction Fertility and Development*. 18: 19–23. 2005.  
IF: 2,400
26. Webster NL, Forni M, Bacci ML, **Giovannoni R**, Razzini R, Fantinati P, Zannoni A, Fusetti L, Dalpra L, Bianco MR, Papa M, Seren E, Sandrin MS, Mc Kenzie IF, Lavitrano M. Multi-transgenic pigs expressing three fluorescent proteins produced with high efficiency by sperm mediated gene transfer. *Molecular Reproduction and Development*. 72(1): 68-76. 2005.  
IF: 2,527
27. Lavitrano M, Smolenski RT, Musumeci A, Maccherini M, Slominska E, Di Florio E, Bracco A, Mancini A, Stassi G, Patti M, **Giovannoni R**, Froio A, Simeone F, Forni M, Bacci ML, D'alise G, Cozzi E, Otterbein LE, Yacoub MH, Bach FH, & Calise F. Carbon monoxide improves cardiac energetics and safeguards the heart during reperfusion after cardiopulmonary bypass in pigs. *The FASEB Journal*. 18(10): 1093-5. 2004.  
IF: 5,043
28. Canzoniere D, Farioli-Vecchioli S, Conti F, Ciotti MT, Tata AM, Augusti-Tocco G, Mattei E, Lakshmana MK, Krizhanovsky V, Reeves SA, **Giovannoni R**, Castano F, Servadio A, Ben-Arie N, & Tirone F. Dual Control of Neurogenesis by PC3 through Cell Cycle Inhibition and Induction of Math1. *Journal of Neuroscience*. 24(13): 3355-3369. 2004.  
IF: 6,344
29. Lavitrano M., Bacci ML, Forni M, Lazzereschi D, Di Stefano C, Fioretti D, Giancotti P, Marfé G, Pucci L, Renzi L, Wang H, Stoppacciaro A, Stassi G, Sargiacomo M, Sinibaldi P, Turchi V, **Giovannoni R**, Della Casa G, Seren E, & Rossi G. Efficient production by sperm-mediated gene transfer of human decay accelerating factor (hDAF) transgenic pigs for xenotransplantation. *Proceedings of National Academy of Science USA*. 99(22), 14230-14235. 2002.  
IF: 9,674