

PERSONAL INFORMATION

Family name, First name: **Majhen, Dragomira**

Researcher unique identifier(s): 244990

Date of birth: 27.10.1976.

URL for web site: <http://hr.linkedin.com/pub/dragomira-majhen/65/6ba/a88>;

<http://www.irb.hr/eng/People/Dragomira-Majhen>

EDUCATION

2016	EMBO Laboratory Management Course
10/2005-11/2008	PhD Faculty of Science, University of Zagreb, Croatia
2007	REMAT workshop: research management training for PhD students and early-career researchers, www.remat-project.eu
11/2001-09/2005	Master of Science; Faculty of Science, University of Zagreb, Croatia

CURRENT POSITION(S)

10/2014-present **Research Associate**, Ruder Boskovic Institute, Croatia

REVIOUS POSITIONS

03/2013-09/2014	Scientist/Experienced researcher at Vaccine Generation, Viral Vaccine Research and Early Development, Crucell Holland BV, The Netherlands; Subject of research: research and development of adenovirus based vectors for vaccine application; supervisor Jerome Custers, PhD
04/2012-02/2013	Postdoctoral fellow at Ruder Boskovic Institute, Zagreb, Croatia; Subject of research: Studying cell entry pathway of NGR-retargeted adenovirus; Studying interaction between adenovirus transduction efficacy and resistance to cytostatics; supervisor Andreja Ambriović-Ristov, PhD
12/2010-03/2012	Postdoctoral fellow at CNRS, UMR 8203, Vectorologie et thérapeutiques anti-cancéreuses Institut de Cancérologie Gustave Roussy, Villejuif, France; Subject of research: Studying cell entry pathway of NGR-retargeted adenovirus; supervisor Karim Benihoud, PhD
12/2008-11/2010	Postdoctoral fellow at Ruder Boskovic Institute, Zagreb, Croatia; Subject of research: Studying basic biology of retargeted adenovirus; supervisor Andreja Ambriović-Ristov, PhD

PROJECT FUNDING RECEIVED SO FAR / PROJECT LEADER

06/2016-06/2017	Proof of concept project awarded by Croatian Agency for SMEs, Innovations and Investments (HAMAG-BICRO): VirusHunter - identifying new potentially pathogen viruses
09/2015-09/2018	Installation project awarded by Croatian Science Foundation: Understanding cell entry pathway of Adenovirus type 26: way of improving vaccine vectors
01/2011-06/2011	UKF Gaining experience Grant
12/2010-02/2012	Croatian Science Foundation postdoctoral grant

FELLOWSHIPS AND AWARDS

03/2013- 09/2014	Marie Curie ITN fellowship Vaccine Generation, Viral Vaccine Research and Early Development, Crucell Holland BV, The Netherlands; supervisor Jerome Custers, PhD
12/2010-02/2012	Croatian Science Foundation postdoctoral grant, UKF Gaining experience Grant, Long term Fellowship awarded by French Government CNRS, UMR 8203 IGR Villejuif, France; supervisor Karim Benihoud, PhD
01/2009-02/2009	Boehringer Ingelheim travel grant UMR 1161 Virologie INRA-AFSSA-ENVA, Ecole Nationale Veterinaire Maisons Alfort, France; supervisor

01/2007-03/2007	Jennifer Richardson, PhD Croatian ministry of Science short term fellowship INSERM U 524, Institute de Recherche sur le Cancer Lille, France ; supervisor Jean D'Halluin, PhD
11/2006-12/2006	Federation of microbiological societies (FEMS) short term fellowship, Fellowship awarded by French Government INSERM U 524, Institute de Recherche sur le Cancer Lille, France; supervisor Jean D'Halluin, PhD
09/2004-11/2004	Fellowship awarded by French Government UMR 1161Virologie INRA-AFSSA- ENVA, Ecole Nationale Veterinaire Maisons Alfort, France
04/2003-06/2003	European Molecular Biology Organization (EMBO) short term fellowship UMR 1161Virologie INRA-AFSSA- ENVA, Ecole Nationale Veterinaire Maisons Alfort, France; supervisor prof Marc Eloit, PhD

PARTICIPATION IN PROJECTS

2015-2016	Adris Foundation project „Preparation of multifunctional (bio)nanosystems – interaction between gold nanoparticles and adenovirus“
2013-2016	FP7-REGPOT project ”Enhancement of the Innovation Potential in SEE through New Molecular Solutions in Research and Development”
2014-2015	Bilateral project with Germany ”Sensitization of melanoma and glioma cells to alkylating drugs by integrin $\alpha\beta3$, $\alpha\beta5$, $\alpha3\beta1$ and $\alpha4\beta1$ silencing”
2007-2014	Croatian Ministry of Science, Education and Sports, “Increase of adenovirus transduction efficacy and resistance to cytostatics”
2007-2010	Technological project awarded by Croatian Ministry of Science, Education and Sports, “Regeneration of knee articular cartilage”
2004-2006	Integrated action: Croatian Ministry of Science, Education and Sports and French Government: COGITO, “Adenovirus retargeting to aminopeptidase N and potential use in gene therapy of cystic fibrosis”
2002-2004	NATO Science Program, Collaborative linkage grant, “Human adenovirus type 5 retargeted on aminopeptidase N”

PUBLICATIONS

- Christmann M, Diesler K, **Majhen D**, Steigerwald C, Berte N, Freund H, Stojanović N, Kaina B, Osmak M, Ambriović-Ristov A, Tomicic MT. Integrin $\alpha V\beta3$ silencing sensitizes malignant glioma cells to temozolomide by suppression of homologous recombination repair. *Oncotarget*. 2017 Apr 25;8(17):27754-27771. doi: 10.18632/oncotarget.10897.
- Teofilović NK, Bihi M, Stojković MR, Tumir LM, Ester K, Kralj M, **Majhen D**, Oršolić N, Lepur A, Vrbanec D, Markotić A, Dembić Z, Weber AN, Piantanida I, Vugrek O, Diken M, Knežević J. 1-ethyl-3-(6-methylphenanthridine-8-yl) urea modulates TLR3/9 activation and induces selective pro-inflammatory cytokine expression in vitro. *Bioorg Med Chem Lett*. 2017 Feb 20. pii: S0960-894X(17)30181-6. doi: 10.1016/j.bmcl.2017.02.048
- Ruščić J, Ambriović-Ristov A, **Majhen D**, Kolundžija S, Barut M, Benihoud K, Krajačić M. Manipulating adenoviral vector ion-exchange chromatography: Hexon versus fiber. *J Sep Sci*. 2016 Sep 23. doi: 10.1002/jssc.201600829.
- Stojanović N, Brozovic A, **Majhen D**, Bosnar MH, Fritz G, Osmak M, Ambriović-Ristov A. Integrin $\alpha\beta3$ expression in tongue squamous carcinoma cells Cal27 confers anticancer drug resistance through loss of pSrc(Y418). *Biochim Biophys Acta*. 2016 Aug;1863(8):1969-78. doi: 10.1016/j.bbamcr.2016.04.019.
- Sobočanec S, Filić V, Matovina M, **Majhen D**, Šafranko ŽM, Hadžija MP, Krsnik Ž, Kurilj AG, Šarić A, Abramić M, Balog T. Prominent role of exopeptidase DPP III in estrogen-mediated protection against hyperoxia in vivo. *Redox Biol*. 2016 Jan 11;8:149-159. doi: 10.1016/j.redox.2016.01.003.
- Vellinga J, Smith JP, Lipiec A, **Majhen D**, Lemckert A, van Ooij M, Ives P, Yallop C, Custers J, Havenga M. Challenges in manufacturing adenoviral vectors for global vaccine product deployment. *Hum Gene Ther*. 2014 Apr;25(4):318-27. doi:10.1089/hum.2014.007.

7. **Majhen D**, Calderon H, Chandra N, Fajardo CA, Rajan A, Alemany R, Custers J. Adenovirus-based vaccines for fighting infectious diseases and cancer: progress in the field. *Hum Gene Ther*. 2014 Apr;25(4):301-17. doi: 10.1089/hum.2013.235.
8. **Majhen D**, Stojanović N, Vukić D, Pichon C, Leduc C, Osmak M, Ambriović-Ristov A. Increased adenovirus Type 5 mediated transgene expression due to RhoB down-regulation. *PLoS One*. 2014 Jan 22;9(1):e86698. doi:10.1371/journal.pone.0086698.
9. Brozovic A, Vuković L, Polančac DS, Arany I, Köberle B, Fritz G, Fiket Z, **Majhen D**, Ambriović-Ristov A, Osmak M. Endoplasmic reticulum stress is involved in the response of human laryngeal carcinoma cells to Carboplatin but is absent in Carboplatin-resistant cells. *PLoS One*. 2013 Sep 23;8(9):e76397. doi:10.1371/journal.pone.0076397.
10. **Majhen D**, Richardson J, Vukelić B, Dodig I, Cindrić M, Benihoud K, Ambriović-Ristov A. The disulfide bond of an RGD4C motif inserted within the Hiloop of the adenovirus type 5 fiber protein is critical for retargeting to α v-integrins. *J Gene Med*. 2012 Dec;14(12):788-97. doi: 10.1002/jgm.2686.
11. **Majhen D**, Stojanović N, Špeljko T, Brozovic A, De Zan T, Osmak M, Ambriović-Ristov A. Increased expression of the coxsackie and adenovirus receptor downregulates α v β 3 and α v β 5 integrin expression and reduces cell adhesion and migration. *Life Sci*. 2011 Aug 15;89(7-8):241-9. doi: 10.1016/j.lfs.2011.06.009.
12. Gabrilovac J, Cupić B, Zivković E, Horvat L, **Majhen D**. Expression, regulation and functional activities of aminopeptidase N (EC 3.4.11.2; APN; CD13) on murine macrophage J774 cell line. *Immunobiology*. 2011 Jan-Feb;216(1-2):132-44. doi: 10.1016/j.imbio.2010.06.005.
13. **Majhen D**, Brozovic A, Buger T, Gabrilovac J, Osmak M, Ambriović-Ristov A. Vincristine-resistant human laryngeal carcinoma cells demonstrate increased Rous sarcoma virus promoter activity. *Life Sci*. 2010 Oct 9;87(15-16):468-74. doi:10.1016/j.lfs.2010.08.012.
14. **Majhen D**, Nemet J, Richardson J, Gabrilovac J, Hajsig M, Osmak M, Eloit M, Ambriović-Ristov A. Differential role of alpha(v)beta(3) and alpha(v)beta(5) integrins in internalization and transduction efficacies of wild type and RGD4C fiber-modified adenoviruses. *Virus Res*. 2009 Jan;139(1):64-73. doi:10.1016/j.virusres.2008.10.004.
15. Brozovic A, **Majhen D**, Roje V, Mikac N, Jakopec S, Fritz G, Osmak M, Ambriovic-Ristov A. alpha(v)beta(3) Integrin-mediated drug resistance in human laryngeal carcinoma cells is caused by glutathione-dependent elimination of drug-induced reactive oxidative species. *Mol Pharmacol*. 2008 Jul;74(1):298-306. doi: 10.1124/mol.107.043836.
16. **Majhen D**, Gabrilovac J, Eloit M, Richardson J, Ambriović-Ristov A. Disulfide bond formation in NGR fiber-modified adenovirus is essential for retargeting to aminopeptidase N. *Biochem Biophys Res Commun*. 2006 Sep 15;348(1):278-87. doi:10.1016/j.bbrc.2006.07.051.
17. **Majhen D**, Ambriović-Ristov A. Adenoviral vectors--how to use them in cancer gene therapy? *Virus Res*. 2006 Aug;119(2):121-33. doi:10.1016/j.virusres.2006.02.001.

SUPERVISION OF GRADUATE STUDENTS AND DOCTORAL FELLOWS

2/2017-6/2017 Direct supervision of ERASMUS student - internship
 2016 – present Direct supervision of 1 PhD student
 2015 Direct supervision of 1 master (graduate) student
 2005-2015 Involved in experimental design and performance of 8 master (graduate) student, 3 PhD students

TEACHING ACTIVITIES

2016 Evaluator within Techniques Bio-industrielles program, University of Orleans, France
 2014 Invited professor/lecturer University of Orleans, France
 2008-present Faculty of food technology and biotechnology, Zagreb; “Gene therapy”, assistant to principal lecturer Andreja Ambriovic Ristov, PhD
 2005-present Faculty of Science, Zagreb; “Molecular basis of gene therapy”, assistant to principal lecturer Andreja Ambriovic Ristov, PhD

ORGANISATION OF SCIENTIFIC MEETINGS

- 2014 member of organizing committee of Summer School "Power of Viral Vectors in Gene Therapy and Basic Science" <http://hmd-cms.hr/viral-vectors/>
- 2007- 2014 Board member of „Festival of Conversation for Culture and Science" <http://www.flow-festival.com/>
- 2007-2008 member of organizing committee of workshop: "Adenoviruses basic biology to gene therapy" www.hmd-cms.hr/adenoviruses/index.html
- 2002-2003 coordinator of "Mladi istraživači" ("Young researchers"), section of Croatian Biological Society (managed and chaired the organization, organized and arranged lectures, coordinated invited speakers, planned and organized the gatherings of young scientists; facilitated interdisciplinary collaboration between young scientists)

INSTITUTIONAL RESPONSIBILITIES

- 2010 member of working group for cooperation between Ruder Boskovic Institute and University of Zagreb
- 2010 representative of Assistant Council in Scientific Council of Ruder Boskovic Institute
- 2005-2010 representative of assistants of Division of Molecular biology in Assistant Council at Ruder Boskovic Institute
- 2005-2006 vice president of Assistant Council at Ruder Boskovic Institute
- 2005-2006 member of Board of postgraduate students association "Mreža mladih znanstvenika" ("Young Scientists Network"), MLAZ www.mlaz.hr

SCHOOLS AND WORKSHOPS ATTENDED

- 2005 EMBO practical workshop: Combination of Electron Microscopy and X-ray Crystallography in Structure Determination, Gif-sur-Yvette, France
- 2005 EMBO workshop: Structural Basis of Papovavirus Biology, Siena, Italy
- 2004 Free Radical School 2004: Free radicals and diseases: gene expression, cellular metabolism and pathophysiology, FEBS/NATO/UNESCO/MCBN/ IUBMB, Spetses, Greece
- 2003 Eighth international summer school on biophysics: Supramolecular structure and function, Rovinj, Croatia
- 2003 FEBS Advanced Course: Viral Vectors, Heidelberg, Germany
- 2002 FEBS Advanced Course: Identification of Novel Targets for Cancer Therapy: Application of SEREX Methodology, Kiev, Ukraine

STAYING AT FOREIGN INSTITUTIONS

- 01/2016-02/2016 IGR Institute Gustave Roussy, Villejuif, Francuska; project activity within InnoMol project, <http://www.innomol.eu/>
- 04/2016-05/2016 IGR Institute Gustave Roussy, Villejuif, Francuska; project activity within InnoMol project, <http://www.innomol.eu/>

ORAL/INVITED PRESENTATIONS

1. **Majhen D**, Jullienne B, Grellier E, Raddi N, Cornilleau G, Ambriović-Ristov A, Benihoud K. NGR-bearing adenovirus type 5 vectors use lipid rafts for cell entry. Power of viral vectors in gene therapy and basic science, 17-20.09.2014. Primošten, Croatia.
2. **Majhen D**. Viruses: how can they help us? Conference open to public, 17.11.2014. Centre International Universitaire pour la Recherche, Orléans, France.
3. **Majhen D**. Adenoviral vectors in gene therapy. "Biotechnology Days in Macedonia" with international participation, 22.09.2012. Skopje, Macedonia.
4. Stojanović N, **Majhen D**, Dekanić A, Bardak I, Osmak M, Ambriović-Ristov A. Integrins $\alpha\beta3$, $\alpha\beta5$, $\alpha3\beta1$ and $\alpha4\beta1$ modulate survival upon cisplatin treatment in MDA-MB-435S breast carcinoma cells. "From Bench to Clinic" Second Meeting of the Croatian Association for Cancer Research with International Participation 8-9.11.2012. Zagreb, Croatia.
5. **Majhen D**, Richardson J, Vukelić B, Dodig I, Cindrić M, Benihoud K, Ambriović-Ristov A. The disulphide bond of an RGD4C motif inserted within the HI loop of adenovirus type 5 fiber protein

is critical for retargeting to αv -integrins. 3rd Congress of Croatian Geneticists with international participation, 13-16.05.2012. Krk, Croatia.

6. **Majhen D**, Jelusić T, Gabrilovac J, Ambriović-Ristov A. VLA-4 retargeted adenovirus type 5 as vector for acute myeloid leukemia. Targeting and Imaging of tumor microenvironment meeting, 23-26.09.2009. Berder Island, France.
7. **Majhen D**, Richardson J, Ambriović Ristov A. Cysteines surrounding an RGD motif inserted in the HI loop of human adenovirus type 5 fiber protein influence its retargeting potential. 26-30.04.2009. 9th International Adenovirus Meeting, Dobogóko, Hungary.
8. **Majhen D**, Gabrilovac J, Richardson J, Eloit M, Ambriović-Ristov A. Adenoviruses Bearing NGR Motifs in the HI-Loop of Adenovirus Fiber Protein Bind Aminopeptidase N and Alpha v Beta 3 Integrins. Structural Basis of Papovavirus Biology EMBO workshop, 11-16.04.2005. Siena, Italy.
9. **Majhen D**, Ambriović-Ristov A, Eloit M. Vector for tumor gene therapy: Human adenovirus type 5 retargeted on aminopeptidase N. Annual meeting of the Croatian Immunological Society, 22.-24.11.2002. Trakošćan, Croatia.

REWARDS

2014 Annual reward for the best scientific article awarded by Ruđer Bošković Institute

MEMBERSHIPS OF SCIENTIFIC SOCIETIES

Member of “French Society for Cell and Gene Therapy”

Member of “Croatian Association for Cancer Research” thus member of EACR (The European Association for Cancer Research)

Member of “Croatian Society of Biochemistry and Molecular Biology” thus member of FEBS (The Federation of European Biochemical Societies)

Member of “Croatian Microbiology Society” thus member of FEMS (Federation of microbiological societies)

COMMISSIONS OF TRUST

Reviewer for following journals: Gene, BMC Cancer, Cancer Research Frontiers

MAJOR COLLABORATIONS

Jeniffer Richardson, PhD, retargeting adenovirus vectors, UMR 1161 Virologie INRA-AFSSA- ENVA, Ecole Nationale Veterinaire Maisons Alfort, France

Karim Benihoud, PhD, intracellular trafficking of retargeted adenovirus vectors, CNRS, UMR 8203 IGR Villejuif, France

Chantal Pichon, PhD, Centre de Biophysique Moleculaire, CNRS-UPR 4301, Orléans, France

LANGUAGES

Croatian, English, Italian, French, passive knowledge of German and Spanish

OUTREACH

Guest in several national television popular science programmes (“Trenutak spoznaje”, “Znanstvena petica”, Društvena mreža „Znanstveni četvrtak“ <http://www.hrt.hr/enz/drustvena-mreza/287358/>, Znanstveni krugovi <http://www.hrt.hr/enz/znanstveni-krugovi/317550/>, <https://hrti.hrt.hr/#/video/show/2857524/znanstveni-krugovi-11-studenoga-2016>).