

Curriculum vitae

FATEMEH RAHBARIZADEH

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1) Associate Professor, Dept. of Medical Biotechnology,

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Educations:

	Level	Years of completion	Educational Establishment	Score
1	B. Sc. Laboratory Sciences	1996	Tehran University of Medical Sciences	18.33/20
2	M. Sc. Clinical Biochemistry	2000	Tarbiat - Modarres University	18.96/20
3	Ph. D. Clinical Biochemistry	2005	Tarbiat - Modarres University	19.05/20

Awards:

- 1 - Stood Third in B. Sc. Laboratory Science (1996).
- 2 - Stood First in M. Sc. Clinical Biochemistry (2000).
- 3 - Winner of Second Prize in Young Kharazmi Award (2000).
- 4 - Winner of Third Prize of Research Work Commission to Combat against Drug Abuse (2001).
- 5 - Winner of First Prize of Research Works in Tarbiat Modarres University (2001).
- 6 - Awarded the Prize for Distinguished Bursary, Iranian Ph.D. Students of the Year (2001-2002).
- 7 - Stood First in Ph.D. Clinical Biochemistry (2002).
- 8 - Stood First in Board Examination in Ph.D. Clinical Biochemistry (2002).
- 9 - Awarded the Prize for Young Investigator in the 22nd World Congress of Pathology and Laboratory Medicine, Korea (2003).
- 10 - Winner of the Third Prize in the Fourth Announcement of Tarbiat Modares Biotechnology Prize (2005).
- 11 - Awarded the Prize for Investigator in the 1st International Student Congress on Medical Research in Iran (2007).
- 12 - Awarded the Prize for Iranian Young Assistant Professor in 2nd International congress of Biochemistry & Molecular biology, Iran (2007).
- 13 - Awarded the Prize for Investigator in the 11th Iranian pharmaceutical Sciences conference (2008).
- 14 - Awarded the Prize for Selected Young Assistant Professor from National Foundation of Selected Researcher (2008).

Thesis:

- 1 - M.Sc. thesis presented to Tarbiat - Modarres University entitled : “Preparation of monoclonal antibody against morphine”. **Rahbarizadeh, F.**, Rasaei, M.J. (Supervisor) and Madani, R. (Co-Supervisor).
- 2 - Ph.D. thesis presented to Tarbiat - Modarres University entitled : “Preparation and characterization of single domain recombinant antibody against MUC1 by phage display method“ **Rahbarizadeh, F.**, Rasaei, M.J., (Supervisor) and Forouzandeh , M. and Allameh, A.A. (Co-Supervisor).

Publications:

a) Full Articles Published:

- 1 - **Rahbarizadeh, F.**, Rasaee, M.J., Madani, R., Rahbarizadeh, M.H., Omidfar, K. Preparation and characterization of specific and high-affinity monoclonal antibodies against morphine. *Hybridoma*. 2000; 19(5):413-7.
- 2 - Malakaneh, M., Rasaee, M.J., **Rahbarizadeh, F.**, Madani, R., Forouzandeh, M.M., Khabiri, K., Alimohammadian, M.H. Characterization of a monoclonal antibody against neopterin using an enzyme-linked immunosorbent assay with penicillinase as label. *Hybridoma*. 2001; 20(2):117-21.
- 3 - Omidfar, K., Rasaee, M.J., Zaraee, A.B., Pour Amir, M., **Rahbarizadeh, F.** Stabilization of penicillinase-hapten conjugate for enzyme immunoassay. *J Immunoassay Immunochem*. 2002; 23(3):385-98.
- 4 - Hallaj, S., Rasaee, M.J., Haerian, M., Paknejad, M., Kashanian, S., **Rahbarizadeh, F.**, Omidfar, K., Malekaneh, M., Kakhki, M.A. Heterologous Enzyme Linked Immunosorbant Assay of Morphine Using Penicillinase as Label. *Iranian Journal of Biotechnology*. 2003; 11(4):239-244.
- 5 - **Rahbarizadeh, F.**, Rasaee, M.J. , Forouzandeh Moghadam M. , Allameh A.A., Narang S.A., Sadeghizadeh M. Induction of immune response in *Camelus bactrianus* and *Camelus dromedarius* against MUC1 – peptide produced heavy-chain antibodies with efficient combining properties. *Journal of Camel Practice and Research*. 2004; 11(1): 1-9.
- 6 - **Rahbarizadeh, F.**, Rasaee, M.J. Monoclonal antibody RR-B7 against MUC1 (in *C.bactrianus*). *Hybrid Hybridomics*. 2004; 23(1): 79.
- 7 - **Rahbarizadeh, F.**, Rasaee, M.J. Monoclonal antibody RR-D40 against MUC1 (in *C.dromedarius*). *Hybrid Hybridomics*. 2004; 23(1): 80.
- 8 - **Rahbarizadeh, F.**, Rasaee, M.J., Forouzandeh Moghadam, M., Allameh A.A., Sadroddiny E. Production of novel recombinant single-domain antibodies against tandem repeat region of MUC1 mucin. *Hybrid Hybridomics*. 2004; 23(3):151-9.
- 9 - Nasiri, H., Forouzandeh, M., Pourfathollah, A., Rasaee, M.J., **Rahbarizadeh, F.** Development of PCR-ELISA technique for determination of HLA DRB1* 01 group alleles. *Iranian Journal of Biotechnology*. 2004; 2(3): 164-169.

- 10 - **Rahbarizadeh, F.**, Rasaei, M.J., Forouzandeh Moghadam, M., Allameh A.A., Sarrami, R., Nasiry, H., Sadeghizadeh, M. Production and characterization of novel heavy-chain antibodies against the tandem repeat region of MUC1 mucin. *Immunol Invest.* 2005; 34(4):431-452.
- 11 - **Rahbarizadeh, F.**, Rasaei, M.J., Forouzandeh Moghadam, M. Allameh A.A. High expression and purification of the recombinant camelid anti-MUC1 single domain antibodies in *Escherichia coli*. *Protein Expr Purif.* 2005; 44(1):32-8.
- 12 – Nasiri, H., Forouzandeh, M., Rasaei, M.J., **Rahbarizadeh, F.** Modified salting-out method: high-yield, high-quality genomic DNA extraction from whole blood using laundry detergent. *J Clin Lab Anal.* 2005; 19(6):229-32.
- 13 - **Rahbarizadeh, F.**, Rasaei, M.J., Forouzandeh, M., Allameh, A.A. Over expression of anti-MUC1 single-domain antibody fragments in the yeast *Pichia pastoris*. *Mol Immunol.* 2006; 43(5):426-35.
- 14 – Mohammadnejad, J., Rasaei, M.J., Saqhafi, B., Rajabibazl, M., **Rahbarizadeh, F.**, Omidfar, K., Paknejad, M. A new competitive enzyme linked immunosorbent assay (MRP83-CA15-3) for MUC1 measurement in breast cancer. *J Immunoassay Immunochem.* 2006; 27(2):139-49.
- 15 - Rajabi-Memari, H., Jalali-Javaran, M., Rasaei, M.J., **Rahbarizadeh, F.**, Forouzandeh-Moghadam, M., Ismaili, A. Expression and characterization of a recombinant single-domain monoclonal antibody against MUC1 mucin in tobacco plants. *Hybridoma (Larchmt).* 2006; 25(4):209-15.
- 16 - Gill, P., Forouzandeh, M., **Rahbarizadeh, F.**, Ramezani, R., Rasaei, M.J. Production of anti-digoxigenin antibody HRP conjugate for PCR-ELISA DIG detection system. *Journal of Immunoassay and Immunochemistry*, 2006; 27(4):303-18.
- 17 - Hasannia, S., Lotfi, A.S., Mahboudi, F., Rezaii, A., **Rahbarizadeh, F.**, Mohsenifar, A. Elevated expression of human alpha-1 antitrypsin mediated by yeast intron in *Pichia pastoris*. *Biotechnol Lett.* 2006; 28(19):1545-50.
- 18 - Ismaili, A., Jalali-Javaran, M., Rasaei, M.J., **Rahbarizadeh, F.**, Forouzandeh-Moghadam, M., Rajabi Memari, H. Production and characterization of anti-MUC1 single-domain antibody in tobacco. *Iranian Journal of Biotechnology.* 2006; 4(3):162-168.
- 19 - Matindoost, L., Jalali Sendi, J., Soleiman-Jahi, H., Etebari, K., **Rahbarizadeh, F.**
In vitro establishment of embryonic primary cultures of silkworm, *Bombyx mori* (Lep.: Bombycidae). *Iranian Society of Entomology Letter.* 2006; 26(2):45-63. (Persian)

- 20- Hoseini-Kakhak, S.A., Ghanbari-Niaki A., **Rahbarizadeh, F.**, Rahimpour, A., Exercise training enhances agouti-related protein (AGRP) expression in male trained rat skeletal muscle. *Research on sport science*. 2006; 16:69-79. (Persian)
- 21- Ismaili, A., Jalali-Javaran, M., Rasaei, M.J., **Rahbarizadeh, F.**, Forouzandeh-Moghadam, M., Memari, H.R. Production and characterization of anti-mucin (MUC1) single-domain antibody in tobacco (*Nicotiana tabacum* cultivar Xanthi). *Biotechnol Appl Biochem*. 2007; 47(Pt 1):11-9.
- 22- Rajabi-Memari, H., Jalali-Javaran, M., Rasaei, M.J., **Rahbarizadeh, F.**, Forouzandeh-Moghadam, M., Ismaili, A. Expression of recombinant single-domain antibody against MUC1 mucin in tobacco plants. *The Scientific Journal of Agriculture*. 2007; 29(3):37-51 (Persian).
- 23- Bazl, M.R., Rasaei, M.J., Foruzandeh, M., Rahimpour, A., Kiani, J., **Rahbarizadeh, F.**, Alirezapour, B., Mohammadi, M. Production of chimeric recombinant single domain antibody-green fluorescent fusion protein in Chinese hamster ovary cells. *Hybridoma*. 2007; 26(1):1-9.
- 24- Ghanbari-Niaki, A., Khabazian, B.M., Hossaini-Kakhak, S.A., **Rahbarizadeh, F.**, Hedayati, M. Treadmill exercise enhances ABCA1 expression in rat liver. *Biochem Biophys Res Commun*. 2007; 361(4):841-6.
- 25- **Rahbarizadeh, F.**, Khoddami Vishteh, V., Ahmadvand, D. Over-expression and purification of recombinant nanobodies and preparation of conjugated second antibody against them. *Journal of Modares Medical Sciences*. 2007; 10(1):17-29. (Persian)
- 26- Ghanbari-Niaki, A., Saghebjo, M., **Rahbarizadeh, F.**, Hedayati, M., Rajabi, H. A single circuit-resistance exercise has no effect on plasma obestatin level in female college students. *Peptide*. 2008; 29:487-490.
- 27- Matindoost, L., Jalali Sendi, J., Soleiman-Jahi, H., Etebari, K. , **Rahbarizadeh, F.** The effects of BmNPV on biochemical changes in primary cultures of *Bombyx mori* embryonic tissue. *In Vitro Cellular & Developmental Biology – Animal*. 2008; 44:121-127.
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- 32- B.M. Khabazian, A. Ghanbari Niaki, **F. Rahbarizadeh**, A. Hoseini Kakhak and M. Jabari Noghahi, The Effect of 6 Weeks of Endurance Training on the Expression of Hepatic ABCA1 in Male Wistar Rats, *World Journal of Sport Science*. 2008, 1 (1): 01-07.
- 33- Khabazian BM, Ghanbari-Niaki A, Safarzadeh-Golpordesari AR, Ebrahimi M, **Rahbarizadeh F**, Abednazari H. Endurance training enhances ABCA1 expression in rat small intestine. *Eur J Appl Physiol*. 2009 Jul 24.
- 34- Moradpour Z, Sephehrizadeh Z, **Rahbarizadeh F**, Ghasemian A, Yazdi MT, Shahverdi AR. Genetically engineered phage harbouring the lethal catabolite gene activator protein gene with an inducer-independent promoter for biocontrol of *Escherichia coli*. *FEMS Microbiol Lett*. 2009 Jul;296(1):67-71.
- 35- Davoud Ahmadvand, **Fatemeh Rahbarizadeh**, Bitra Geramizadeh, Rahim Ahmadvand, Mohamad Hosein Karimi, Hasan Akrami, Padideh Ebadi ,Cloning and expression of vascular endothelial growth factor receptor-1 in *Escherichia coli* and analysis of its growth inhibition effect on human umbilical vein endothelial cells. *Journal of Medical Sciences Modares*. 2009;12(1):1-9. (Persian, 1386).
- 36- Sheikholeslami F., Rasaei MJ., Shokrgozar MA, Dizaji MM, **Rahbarizadeh F**, Ahmadvand D. Isolation of a Novel Nanobody Against HER-2/neu Using Phage Displays Technology ,*Lab Medicine* 2010 41:69-76.
- 37-Khabazian Behzad Mehdi; Ghanbari-Niaki Abbass; Safarzadeh-Golpordesari Ali Reza; **Rahbarizadeh F**, et al. Endurance training enhances ABCA1 expression in rat small intestine. *EUROPEAN JOURNAL OF APPLIED PHYSIOLOGY*, 2009, 107 (3): 351-358.
- 38- Ghanbari-Niaki Abbass; Fathi Rozita; Kakhak Sayed Alireza Hossaini;**Rahbarizadeh F**, et al. Treadmill Exercise's Reduction of Agouti-Related Protein Expression in Rat Liver, *INTERNATIONAL JOURNAL OF SPORT NUTRITION AND EXERCISE METABOLISM*,2009, 19 (5): 473-484.

- 39- Mahdavi Mehdi; Ebtekar Massoumeh; Mahboudi Fereidoun; Khorram Khorshid H; **Rahbarizadeh F**, et al. Immunogenicity of a new HIV-1 DNA construct in a BALB/c mouse model. *Iranian journal of immunology*, 2009, 6 (4): 163-73.
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- 41- Dadmehr Mehdi; Korouzhdehi Behnaz; **Rahbarizadeh Fatemeh**; et al. Isolation of OmpA gene from *Salmonella typhimurium* and transformation into alfalfa in order to develop an edible plant based vaccine *AFRICAN JOURNAL OF BIOTECHNOLOGY*, 2011 10(5): 854-859.
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- 47- Sadeqzadeh E, **Rahbarizadeh F**, Ahmadvand D, Rasae MJ, Parhamifar L, Moghimi SM. Combined MUC1-specific nanobody-tagged PEG-polyethylenimine polyplex targeting and transcriptional targeting of tBid transgene for directed killing of MUC1 over-expressing tumour cells. *J Control Release*. 2011;156(1):85-91.
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- 52- Minaeian S, **Rahbarizadeh F**, Zarkesh Esfahani SH, Ahmadvand D. Characterization and enzyme-conjugation of a specific anti-L1 nanobody. *J Immunoassay Immunochem.* 2012 Oct;33(4):422-34.
- 53- Sharifzadeh Z, **Rahbarizadeh F**, Shokrgozar MA, Ahmadvand D, Mahboudi F, Jamnani FR, Moghimi SM. Genetically engineered T cells bearing chimeric nanoconstructed receptors harboring TAG-72-specific camelid single domain antibodies as targeting agents. *Cancer Lett.* 2013;334(2):237-44.
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- 55- Jamnani FR, **Rahbarizadeh F**, Shokrgozar MA, Ahmadvand D, Mahboudi F, Sharifzadeh Z. Targeting high affinity and epitope-distinct oligoclonal nanobodies to HER2 over-expressing tumor cells. *Exp Cell Res.* 2012 Jun 10; 318(10):1112-24.
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liver of, *Cyprinus Carpio* Common, from Anzali wetland, Iran. *Bull Environ Contam Toxicol.* 2013 May;90(5):578-84.

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Patents:

1 - Preparation of monoclonal antibody against morphine, I.R. Iran, Patent No. : 29313, 2004.

2 - Induction of immune response, preparation of Heavy-chain antibody gene library from one- and two-humped camel against MUC1, a breast tumor marker and preparation of single-domain recombinant antibody from these library, I. R. Iran, Patent No. 29312, 2004.

3 - Preparation of heavy chain antibody gene libraries from one- and two-humped camels, single domain recombinant antibodies against MUC1 and sequencing of prepared VHH, I. R. Iran, Patent No.32519, 2005.

4 - Large scale production of single domain antibodies against MUC1 in *Pichia pastoris* and *E. coli* and characterization of product after over-expression, I. R. Iran, Patent No.32520, 2005.

5 - Preparation of HRP conjugated anti-digoxigenin in order to use in molecular detection system with higher affinity, I. R. Iran, Patent No. 32208, 2005.

6 - Production and characterization of specific nanobody against MUC1 tumor marker (from two-humped camel) in tobacco plant, I. R. Iran, Patent No. 34963, 2006.

- 7 - Production of recombinant single-domain antibody against MUC1 (from one-humped camel) in tobacco plant, I. R. Iran, Patent No.35278, 2006.
- 8 - Isolation of *Lactobacillus salivarius* and *Lactobacillus cryptococcus* bearing probiotic features from chicken intestinal tube, I. R. Iran, Patent No.44818, 2007.
- 9 - Construction of *Lactobacillus* expression vector in order to expression of *Salmonella ompA* protein and preparation of live oral vaccine against *Salmonella*, I. R. Iran, Patent No.44819, 2007.
- 10 - Isolation of *Lactobacillus jansonii* bearing probiotic features from ostrich colon by biochemical and genetic (16S rRNA) characterization, I. R. Iran, Patent No.45101, 2007.
- 11 - Isolation, identification and characterization of *Lactobacillus salivarius* bearing probiotic features from ostrich colon by biochemical and genetic (16S rRNA) analysis, I. R. Iran, Patent No.45102, 2007.
- 12 - Preparation of AR32 Nanobody against MUC1 in order to targeting of breast cancer cells, I. R. Iran, Patent No.46232, 2008.
- 13 - Construction and preparation of two MUC1 targeting T lymphocyte chimeric receptor including CD3zeta-CD28-VHH and I and 2 IgG3 hinge, I. R. Iran, Patent No.46231, 2008.
- 14- Preparation of anti-MUC1 targeted PEGylated polyethylenimine/DNA polyplex nanoparticles, I. R. Iran, Patent No.59814, 2009.
- 15- Preparation of anti-MUC1 targeted polyethylenimine/DNA polyplex nanoparticles, I. R. Iran, Patent No.59815, 2009.
- 16- Multi-mode cancer targeted nanoparticulate system and a method of synthesizing the same
Publication number: US 20130178603 A1, Application number: US 13/347,813, Publication date : Jul 11, 2013, Inventors: Rassoul Dinarvand, Mohammad Ali Derakhshan, **Fatemeh Rahbarizadeh**, Reza Faridi Majidi, Azade Taheri Borujeni, Seyed Mahdi Rezayat.
- 17- Preparation and characterization of loading and release of doxorubicin from targeted liposome with oligoclonal nanobodies against HER2. Publication number: A61K9/127; B82Y 30/00;A61K 47/18;A61P 19/00. 2017, Inventors: **Fatemeh Rahbarizadeh**, Davood Ahmadvand, Alireza Ferasat. Iranian Research Organization for Science and Technology

Teaching Experiences:

- 1 - Teaching at Tarbiat Modarres University. Courses including: “Animal cell culture” to M.Sc. and Ph.D. Medical Biotechnology students from 2000 until now.
- 2 - Teaching at Tarbiat Modarres University. Courses including: “Advanced techniques in medical biotechnology” to M.Sc. Medical Biotechnology students, from 2000 until 2004.
- 3 - Teaching at Tarbiat Modarres University. Courses including: “Genetic engineering” to M.Sc. Medical Biotechnology students, from 2004 until now.
- 4 - Teaching at Zabol University. Courses including: “Genetic engineering” to M.Sc. Agricultural Biotechnology students, 2006.
- 5 - Teaching at Tehran University. Courses including: “Biological tools” and “Nanotechnology” to Ph.D. Nanotechnology students, from 2009 until 2012.
- 6- Teaching at Tarbiat Modarres University. Courses including: “Genetic engineering”, “New topics in Biotechnology”, “Nanotechnology”, “Protein engineering”, to M.Sc. and Ph.D. students of Medical Biotechnology, from 2004 until now.

Research interest:

- 1 - Immunobiotechnology and antibody engineering
- 2 - Genetic engineering and recombinant proteins production and purification
- 3 - Vector designing and engineering
- 4 - Preparation of Immunotargeted nanoparticles
- 5 - Hybridoma technology
- 6 - Cancer research; immunodiagnosis and immunotherapy
- 7 - Gene therapy
- 8 - Probiotics and oral vaccine.

Membership of scientific societies:

- 1 - Biochemical Society of I.R. Iran.
- 2 - Biotechnological Society of I.R. Iran.
- 3 - Genetic Society of I.R. Iran.

4 - Iranian Society of Ethics in Sciences and Technology.

5- Active Member (no. 365307) of AACR (American Association of Cancer Research).