

**Curriculum vitae**  
**FATEMEH RAHBARIZADEH**

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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 22<sup>nd</sup> 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 1<sup>st</sup> International Student Congress on Medical Research in Iran (2007).

- 12 - Awarded the Prize for Iranian Young Assistant Professor in 2<sup>nd</sup> International congress of Biochemistry & Molecular biology, Iran (2007).
- 13 - Awarded the Prize for Investigator in the 11<sup>th</sup> 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.**, Rasaee, 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.**, Rasaee, 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., Zarsae, 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.**, Rasaee, 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.**, Rasaee, 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., Rasaee, 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.**, Rasaee, 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., Rasaee, 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., Rasaee, 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., Rasaee, 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., Rasaee, M.J., **Rahbarizadeh, F.**, Forouzandeh-Moghadam, M., Rajabi Memari, H. Production and characterization of anti-MUC1 single-domain antibody in tobacco. Iranian of Journal Biotechnolog. 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., Rasaee, 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., Rasaee, 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., Rasaee, M.J., Forouzandeh, 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)
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- 34- Moradpour Z, Sepehrizadeh 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- Farzaneh Sheikholeslami, Mohammad J. Rasae, Mohammad A. Shokrgozar, Manijeh Mokhtari Dizaji, **Fatemeh Rahbarizadeh** and Davoud Ahmadvand, 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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- 42- **Rahbarizadeh Fatemeh**; Ahmadvand Davoud; Sharifzadeh Zahra Nanobody; an Old Concept and New Vehicle for Immunotargeting , IMMUNOLOGICAL INVESTIGATIONS, 2011, 40(3): 299-338.
- 43- Ahmadvand Davoud; **Rahbarizadeh Fatemeh**; Iri-Sofla Farnoush Jafari; et al., Inhibition of Angiogenesis by Recombinant VEGF Receptor Fragments. LABMEDICINE, 2010, 41 (7): 417-422.
- 44- Khabazian Behzad Mehdi; Kakhak Seyed Alireza Hosseini; **Rahbarizadeh Fatemeh**, MEDICINE AND SCIENCE IN SPORTS AND EXERCISE. 2010, 42(5) Sup: 1: 533-533.
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- 46- Ahmadvand D, **Rahbarizadeh F**, Moghimi SM. Biological targeting and innovative therapeutic interventions with phage-displayed peptides and structured nucleic acids (aptamers). Curr Opin Biotechnol. 2011;22(6):832-8.
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- 51- Sharifzadeh Z, **Rahbarizadeh F**, Shokrgozar MA, Ahmadvand D, Mahboudi F, Rahimi Jamnani F, Aghae Bakhtiari SH. Development of Oligoclonal Nanobodies for Targeting the Tumor-Associated Glycoprotein 72 Antigen. Mol Biotechnol. 2013;54(2):590-601.
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- 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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## Books:

- 1- Polyclonal and Monoclonal Antibodies (from production to application); **Fatemeh Rahbarizadeh**, Gholamreza Asadikaram, Fatemeh Rahimi, Tarbiat Modares University, Tehran, Iran, 1395.

2- Recombinant Antibodies (from production to application); **Fatemeh Rahbariadeh**, Tarbiat Modares University, Tehran, Iran, 1395.

### **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 jansoni* 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.



**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).