

In the Name of God

Curriculum Vitae



Personal Information:

- Forename: Ali
- Surname: Jahanian-Najafabadi
- Date and Place of Birth: 1982- Najafabad, Isfahan.
- Languages: Persian (Native), English (Fluent), German, French (Elementary)

Contact Information:

- Present Address: Department of Pharmaceutical Biotechnology, School of Pharmacy and Pharmaceutical Sciences, Isfahan University of Medical Sciences and Health Services, Hezar Jarib Ave. Isfahan, Iran.
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Education:

- § 2006- 2012: Ph.D. of Pharmaceutical Biotechnology, Pasteur Institute of Iran, Tehran, Iran.
- § 2000-2006: Doctor of Pharmacy (Pharm. D.), School of Pharmacy, Isfahan University of Medical Sciences and Health Services, Isfahan, Iran.

§ Ph. D. Thesis

- § **Expression of A1-GMCSF fusion protein in Baculovirus expression system for biotherapy of hematologic malignancies.** Supervisors: Saeid Bouzari (Ph.D.), Mana Oloomi (Ph.D.)

Pharm. D. Thesis:

- **Cloning of Polyhydroxyalkanoate Synthase Genes of *Pseudomonas aeruginosa* PTCC 1310.** Supervisors: Daryoush Abedi (Ph.D), Hamid Mir Mohammad Sadeghi (Ph.D), Sadegh Valian Boroujeni (Ph.D).

Publications:

§ Books:

- Application of Medicinal Herbs, Nutrition and Complementary Medicine in Treatment of Diseases (in Farsi).
- The 50 years history of Isfahan school of pharmacy (in Farsi).

§ Papers:

1. Artificial Blood Substitutes: First Steps on the Long Route to Clinical Utility. Samira Moradi, **Ali Jahanian-Najafabadi** and Mehryar Habibi Roudkenar. Clinical Medicine Insights: Blood Disorders 2016;9 33-41
2. Expression of HCV Alternative Reading Frame Protein (Core+1/F) in Baculovirus Expression System and its Evaluation for Assessment of Specific Anti-core+1 Antibody in Iranian HCV Infected Patients. Pooneh Rahimi, Rouhollah Vahabpour, Farideh Sadat Sajadian Fard, Fatemeh Motevalli, Fatemeh Fotouhi Chahouki, Mohammad Reza Aghasadeghi, Azam Bolhassani, Seyed Mehdi Sadat, Ehsan Mostafavi, Nasir Mohajel, **Ali Jahanian-Najafabadi**, Mohammad Reza Amiran. Clinical Laboratory, Oct. 2016. in press.
3. Production and evaluation of cytotoxic effects of DT386-BR2 fusion protein as a novel anti-cancer agent. Shafiee F, Rabbani M, **Jahanian-Najafabadi A.** J Microbiol Methods. 2016 Nov;130:100-105
4. Expression and purification of toxic anti-breast cancer p28-NRC chimeric protein. Soleimani M, Mirmohammad-Sadeghi H, Sadeghi-Aliabadi H, **Jahanian-Najafabadi A.** Adv Biomed Res. 2016 Apr 19;5:70.
5. Luteinizing hormone-releasing hormone targeted poly(methyl vinyl ether maleic acid) nanoparticles for doxorubicin delivery to MCF-7 breast cancer cells. Varshosaz, J.,

Jahanian-Najafabadi, A., Ghazzavi, J. IET Nanobiotechnology, Volume 10, Issue 4, Pages 206-21

6. Targeted Delivery of Docetaxel by Use of Transferrin/Poly(allylamine hydrochloride)-functionalized Graphene Oxide Nanocarrier. Nasrollahi, F., Varshosaz, J., Khodadadi, A.A., Lim, S., **Jahanian-Najafabadi, A.** ACS Applied Materials and Interfaces, Volume 8, Issue 21, Pages 13282-13293
7. Anti-pseudomonas activity of essential oil, total extract, and proanthocyanidins of *Pinus eldarica* Medw. bark. Sadeghi, M.a, Zolfaghari, B., **Jahanian-Najafabadi, A.**, Abtahi, S.R. Research in Pharmaceutical Sciences, Volume 11, Issue 1, Pages 58
8. The effect of intrathecal administration of the neuronal N-type calcium channels antagonist, ω -conotoxin MVIIA, on attenuating the spontaneous and naloxone-precipitated morphine withdrawal in rats. Bozorgi, H., **Jahanian-Najafabadi, A.**, Rabbani, M. Toxin Reviews, Volume 35, Issue 1-2, Pages 33-37
9. Theoretical design of a new chimeric protein for the treatment of breast cancer. Soleimani, M., Mahnam, K., Mirmohammad-Sadeghi, H., Sadeghi-Aliabadi, H., **Jahanian-Najafabadi, A.** Research in Pharmaceutical Sciences, Volume 11, Issue 3, 2016, Pages 187-199
10. In silico design, cloning and high level expression of L7/L12-Tomp31 fusion protein of Brucella antigens. Golshani M, Rafati S, **Jahanian-Najafabadi A**, Nejati-Moheimani M, Siadat SD, Shahcheraghi F, Bouzari S. Res Pharm Sci. 2015 Sep-Oct;10(5):436-45.
11. A model to study the phenotypic changes of insect cell transfection by copepod super green fluorescent protein (cop-GFP) in baculovirus expression system. Shokrollahi, N., Shahbazzadeh, D., Pooshang-Bagheri, K., Habibi-Anbouhi, M., **Jahanian-Najafabadi, A.**, Behdani, M. Iranian Biomedical Journal, Volume 20, Issue 3, 2016, Pages 182-186
12. Adenovirus-mediated over-expression of Nrf2 within mesenchymal stem cells (MSCs) protected rats against acute kidney injury. Mohammadzadeh-Vardin, M.a, Roudkenar, M.H.b , **Jahanian-Najafabadi, A.** Advanced Pharmaceutical Bulletin, Volume 5, Issue 2, 2015, Pages 201-20
13. In vitro augmentation of mesenchymal stem cells viability in stressful microenvironments : In vitro augmentation of mesenchymal stem cells viability. Amiri F, **Jahanian-Najafabadi A**, Roudkenar MH. Cell Stress Chaperones. 2015 Mar;20(2):237-51.

14. Antigenicity and immunogenicity of fused B-subunit of heat labile toxin of *Escherichia coli* and colonization factor antigen I polyepitopes. Savar NS, Dashti A, Darzi Eslam E, **Jahanian-Najafabadi A**, Jafari A. *J Microbiol Methods*. 2014 Nov;106:40-6.
15. Adenovirus-mediated over-expression of Nrf2 within mesenchymal stem cells (MSCs) protected rats against acute kidney injury. Mohammadzadeh-Vardin, M., Roudkenar, M.H., **Jahanian-Najafabadi, A**. *Adv. Pharm. Bulletin*. 2015; 5 (2), pp. 201-208.
16. Co-culture of bone marrow-derived mesenchymal stem cells overexpressing lipocalin 2 with HK-2 and HEK293 cells protects the kidney cells against cisplatin-induced injury. Halabian R, Roudkenar MH, **Jahanian-Najafabadi A**, Hosseini KM, Tehrani HA. *Cell Biol Int*. 2015 Feb;39(2):152-63.
17. Molecular cloning of the capsular antigen F1 of *Yersinia pestis* in pBAD/gIII plasmid. **Jahanian-Najafabadi, A.**, Soleimani, M., Azadmanesh, K., Mostafavi, E., Majidzadeh-A, K. *Res. Pharm. Sci*. 2015; 10 (1), pp. 91-96
18. Recombinant human lipocalin 2 acts as an antibacterial agent to prevent platelet contamination. Bakhshandeh Z, Halabian R, Imani-Fooladi AA, **Jahanian-Najafabadi A**, Jalili MA, Roudkenar MH. *Hematology*. 2014 Dec;19(8):487-92.
19. In silico and In vivo studies of truncated forms of flagellin (FliC) of enteroaggregative *Escherichia coli* fused to FimH from uropathogenic *Escherichia coli* as a vaccine candidate against urinary tract infections. Savar NS, **Jahanian-Najafabadi A**, Mahdavi M, Shokrgozar MA, Jafari A, Bouzari S. *J Biotechnol*. 2014 Apr 10;175:31-7.
20. Induction of multipotency in umbilical cord-derived mesenchymal stem cells cultivated under suspension conditions. Amiri F, Halabian R, Salimian M, Shokrgozar MA, Soleimani M, **Jahanian-Najafabadi A**, Roudkenar MH. *Cell Stress Chaperones*. 2014 Sep;19(5):657-66.
21. Lipocalin 2 decreases senescence of bone marrow-derived mesenchymal stem cells under sub-lethal doses of oxidative stress. Bahmani B, Roudkenar MH, Halabian R, **Jahanian-Najafabadi A**, Amiri F, Jalili MA. *Cell Stress Chaperones*. 2014 Sep;19(5):685-93.

22. In silico and in vitro study of truncated forms of flagellin (FliC) of enteroaggregative Escherichia coli (EAEC), Savar NS, Sardari S, **Jahanian-Najafabadi A** and Bouzari S. Mol. Inf. 2013, 32, 707 – 716.
23. Lipocalin-2 mediated up-regulation of various antioxidants and growth factors protects bone-marrow derived mesenchymal stem cells against unfavorable microenvironments, Raheleh Halabian, Hossein A. Tehrani, **Ali Jahanian-Najafabadi**, Mehryar Habibi Roudkenar. Cell Stress Chaperones. 2013 Nov;18(6):785-800.
24. Adenovirus-mediated over-expression of the Nrf2 protein within MSCs protected rats against acute kidney injury, Mohammadzadeh M, Habibi Roudkenar M, **Ali Jahanian-Najafabadi**. Adv Pharm Bull. 2015 Jun;5(2):201-8.
25. HIF-1 α confers resistance to induced stress in bone marrow-derived mesenchymal stem cells, Ali Asghar Kiani, Ahmad Kazemi, Rahele Halabian, Mahshid ohammadipour, **Ali Jahanian-Najafabadi**, Mehryar Habibi Roudkenar. Arch. Med. Res., 2013. 44 (2013) 185-193
26. Expression of the recombinant plasminogen activator (reteplase) by a non-lytic insect cell expression system, S Aflakiyan, H Mir Mohammad Sadeghi, MA Shokrgozar, M Rabbani, S Bouzari, **A Jahnian-Najafabadi**, Research in Pharmaceutical Sciences 2013; 8(1): 9-15.
27. Functional Recombinant Extra Membrane Loop of Human CD20, an Alternative of the Full Length CD20 Antigen. Mahdi Habibi Anbouhi, Aida Feiz Barazandeh, Saeid Bouzari, Mohsen Abolhassani, Hossein Khanahmad, Majid Golkar, Mohammad Reza Aghasadeghi, Mahdi Behdani, **Ali Jahanian-Najafabadi** , Mohammad Ali Shokrgozar. Iranian Biomedical Journal 2012; 16 (3)
28. Expression of recombinant Hepatitis C virus (HCV) core, E1 and E2 proteins by the baculovirus expression vector system. Shaghayegh Yazdani- Neyshabouri, Mohammad Reza Aghasadeghi, **Ali Jahanian-Najafabadi**, Saeid Bouzari, Arash Arashkia, Seyed Mehdi Sadat, Seyed Davar Siadat, Zohre-Azita Sadigh, Sohiela Hekmat, Mohammad Hassan Pouriayevali and Nafiseh kashanizadeh. African Journal of Microbiology Research. 2012; 6(19): 4152-4157.
29. Isolation, Cloning and High- Level Expression of Neutrophil Gelatinase-Associated Lipocalin Lipocalin2 by Baculovirus Expression System through Gateway Technology. Mahdi Rouhbakhsh, Raheleh Halabian, Nasser Masroori , Mahshid Mohammadi Pour,

- Parisa Bahmani, Amaneh Mohammadi Roushandeh, **Ali Jahanian-Najafabadi**, Mehryar Habibi Roudkenar. Iranian Journal of Basic Medical Sciences. 2012; 3(56): 845-852.
30. Optimization of the Expression of Genes Encoding Poly (3-hydroxyalkanoate) Synthase from *Pseudomonas aeruginosa* PTCC 1310 in *Escherichia coli*. Daryoush Abedi, Maryam Beheshti, **Ali Jahanian-Najafabadi**, Hamid Mir Mohammad Sadeghi and Vajihe Akbari. Avicenna J Med Biotech 2012; 4(1): 47-51.
 31. Attempts to Express the A1-GMCSF Immunotoxin in the Baculovirus Expression Vector System. **Ali Jahanian-Najafabadi**, Saeid Bouzari, Mana Oloomi, Mehryar Habibi Roudkenar, and Lorenz M. Mayr. Biosci, Biotechnol, Biochem., 2012. 76(4).
 32. Assessment of selective toxicity of insect cell expressed recombinant A1-GMCSF protein toward GMCSF receptor bearing tumor cells. **A. Jahanian-Najafabadi**, S. Bouzari, M. Oloomi, M. Habibi Roudkenar, M.A. Shokrgozar. Research in Pharmaceutical Sciences, August 2012; 7(3)
 33. HESA-A Exerts Its Cytoprotective Effects through Scavenging of Free Radicals: An in Vitro Study. Mehryar Habibi Roudkenar, Parisa Bahmani, Raheleh Halabian, Amaneh Mohammadi Roushandeh, **Ali Jahanian-Najafabadi**, Mohammad Ali Shokrgozar. Iran J Med Sci 2012; 37(1): 47-53.
 34. Nrf-2 overexpression in mesenchymal stem cells reduces oxidative stress-induced apoptosis and cytotoxicity. Mohammad Mohammadzadeh, Raheleh Halabian, Ahmad Gharehbaghian, Naser Amirizadeh, **Ali Jahanian-Najafabadi**, Amaneh Mohammadi Roushandeh and Mehryar Habibi Roudkenar. Cell Stress and Chaperones, 2012 Sep;17(5):553-65.
 35. Effects of polygonum aviculare herbal extract on proliferation and apoptotic gene expression of MCF-7. Habibi Roudkenar M., Mohammadi Roushandeh A., Delazar A., Halabian R., Soleimani Rad J., Mehdipour A. Bagheri M., **Jahanian-Najafabadi A.** DARU, 2011;19(5) : 326-331.
 36. Inhibition of silibinin on migration and adhesion capacity of human highly metastatic breast cancer cell line, MDA-MB-231, by evaluation of β 1-integrin and downstream molecules, Cdc42, Raf-1 and D4GDI. Mohadeseh Dastpeyman, Nasrin Motamed, Kayhan Azadmanesh, Ehsan Mostafavi, Vahid Kia, **Ali Jahanian-Najafabadi**, Mohammad Ali Shokrgozar, Medical Oncology, 2012 Dec;29(4):2512-8.

37. The Expression of Heme Oxygenase-1 in Human-Derived Cancer Cell Lines. P. Bahmani, G.H. Hassanshahi, R. Halabian, A. Mohammadi Roushandeh, **A. Jahanian-Najafabadi**, M. Habibi Roudkenar. *Iran J Med Sci*. December 2011; Vol 36 No 4.
38. Adenovirus-mediated expression of the HO-1 protein within MSCs decreased cytotoxicity and inhibited apoptosis induced by oxidative stresses, Pejman Hamedi-Asl, Raheleh Halabian, Parisa Bahmani, Mahshid Mohammadipour, Mohammad Mohammadzadeh, Amaneh Mohammadi Roushandeh, **Ali Jahanian-Najafabadi**, Yoshikazu Kuwahara & Mehryar Habibi Roudkenar. *Cell Stress and Chaperones*, 2012 Mar;17(2):181-90.
39. Genetically engineered mesenchymal stem cells stably expressing green fluorescent protein. Raheleh Halabian, Mohamad Hosein Mohammadi, Mohammad Salimi, Maryam Amani, Amaneh Mohammadi Roushandeh, Mahnaz Aghaipour, Nasser Amirizadeh, Majid Ebrahimi, **Ali Jahanian Najafabadi**, Mehryar Habibi Roudkenar. *Iranian Journal of Basic Medical Sciences*. Vol. 13, No. 2, Spring 2010, 24-30
40. High-level expression of functional recombinant human coagulation factor VII in insect cells. Masroori N, Halabian R, Mohammadipour M, Roushandeh AM, Rouhbakhsh M, **Najafabadi AJ**, Fathabad ME, Salimi M, Shokrgozar MA, Roudkenar MH. *Biotechnol let*. 2010 Mar 7.
41. Lipocalin 2 regulation by thermal stresses: Protective role of Lcn2/NGAL against cold and heat stresses. Mehryar Habibi Roudkenar, Raheleh Halabian, Amaneh Mohammadi Roushandeh, Mohammad Reza Nourani, Nasser Masroori, Majid Ebrahimi, Mahin Nikogoftar, Mehdi Rouhbakhsh, Parisa Bahmani, **Ali Jahanian Najafabadi**, Mohammad Ali Shokrgozar. *Experimental Cell Research* 2009; 315: 3140-3151
42. Expression and purification of recombinant human coagulation Factor VII fused to His-Tag through Gateway technology. Raheleh Halabian, Mahdi Edalati Fathabad, Nasser Masroori, Amaneh Mohammadi Roushandeh, Sasan Saki, Nasser Amirizadeh, **Ali Jahanian Najafabadi**, Ahmad Gharehbaghian, Mehryar Habibi Roudkenar. *Blood Transfusion* 2009; 7: 305-12.
43. Establishment of a cell line expressing recombinant factor VII and its subsequent conversion to active form FVIIa through hepsin by genetic engineering method. Halabian R, Roudkenar MH, Esmaili NS, Masroori N, Roushandeh AM, **Najafabadi AJ**. *Vox Sang*. 2009 May; 96(4):309-15. Epub 2009 Jan 19.
44. Identification of an isolate of *Pseudomonas aeruginosa* deposited in PTCC as a PHA producer strain: Comparison of three different bacterial genomic DNA extraction methods.

Hamid Mir Mohammad Sadeghi , **Ali Jahanian Najafabadi**, Daryoush Abedi, Abbas Jafarian Dehkordi. Journal of Biological Sciences, 2008. 8(4): 826-830.

45. Cloning and partial sequencing of *phaC1* and *phaC2* genes encoding Poly(3-hydroxyalkanoate) synthases from *Pseudomonas aeruginosa* PTCC 1310. Daryoush Abedi, **Ali Jahanian Najafabadi**, Hamid Mirmohammad Sadeghi, Sadeq Vallian. Biotechnology 2007. 6(4): 497-504.

Abstracts:

- **Expression of reteplase by a non-viral insect cell expression system.** S. Aflakiyan, H. Mir Mohammad Sadeghi, M. Shokrgozar, M. Rabbani, S. Bouzari, **A. Jahanian-Najafabadi**. 13th Iranian Pharmaceutical Sciences Congress, 2012, Isfahan, Iran.
- **Production of recombinant A254-GMCSF immunotoxin by a non-lytic insect cell expression and evaluation of its cytotoxicity by in vitro studies.** **A. Jahanian-Najafabadi**, S. Bouzari, M. Oloomi, M. Habibi Roudkenar, M. Shokrgozar. 13th Iranian Pharmaceutical Sciences Congress, 2012, Isfahan, Iran.
- **Functional Expression of *phaC1* and *phaC2* genes encoding Poly(3-hydroxyalkanoate) synthases from *Pseudomonas aeruginosa* PTCC 1310.** **Jahanian A.**, Abedi D., Mir Mohammad Sadeghi H. the 12th seminar of Iranian pharmacy students, November 2006, Sari.

§ Packages:

- A brochure on “**Severe Drug Interactions**”

Patents:

- pMB-IRES plasmid for rapid and concise selection of recombinant stable cell lines in non-viral insect cell expression system (Patent no.: 74969)

Submitted sequences

- 1- [Synthetic construct fimH-A-B \(fimH-fliC truncA-fliC truncB\) gene, partial cds](#); Accession: JX162649.1, GI: 398707242
- 2- [Synthetic construct truncated FliC/FimH fusion protein \(fliC truncA/fimH/fliC truncB fusion\) gene, partial cds](#), Accession: JX083850.1, GI: 390516480

Thesis Supervision

1. Expression and purification of 34 amino acid fragment of human parathyroid hormone (hPTH 1-34) via its fusion to intein sequence of *Mycobacterium xenopi* gyrA gene, Sepideh Abarghooinezhad, Pharm. D. Thesis
2. Evaluation of Lipocalin2 serum levels in relapsing-remitting multiple sclerosis patients: a case-control study, Zahra Bayat, Pharm. D. Thesis
3. Construction, expression and purification of DT386-BR2 fusion protein in *Escherichia coli* and evaluation of its biological activity, Fatemeh Shafiee, Ph.D. Thesis
4. Recombinant production of P-28 azurin-NRC-03 fusion peptide in *E. Coli* and *in vitro* study of its anti cancer effects, Meysam Solaimani. Ph.D Thesis.
5. Production and *in vitro* characterization of 5-FU nanofibers for coating on rectal stents in treatment of colorectal cancers, Ahmad Soleimani, Pharm. D. Thesis
6. Blue light phototherapy after application of the gel containing Antirrhinum majus extraction in light and medium acne treatment, Farideh Rahmani. Pharm. D. thesis
7. Evaluation of cytotoxic effects of a dinuclear palladacycle derivative, biphosphinic complex, on cisplatin-resistant leukemic cell lines, Fatemeh Roohani. Pharm. D. Thesis
8. Expression of recombinant *E. coli* B-glucuronidase via insertion of the inducible coding construct into the host genome, Shiva Shamshiri. Pharm. D. Thesis
9. Evaluation of protective effects of Lcn2 up-regulation on cisplatin induced genotoxicity, Fatemeh Sadeghi. MSc. Thesis
10. Production of recombinant baculovirus vector expressing Shigatoxin A1 subunit under control the of alpha-fetoprotein promoter for gene therapy of hepatocellular carcinoma, Shaghayegh Heidarpour. Pharm. D. Thesis

Research Grants:

- § Construction, expression and purification of DT386-BR2 fusion protein in *Escherichia coli* and evaluation of its biological activity, Isfahan University of Medical Sciences.
- § Production of polyclonal anti-GST tag antibody, Pasteur Institute of Iran.
- § Simultaneous expression of antibiotic resistance and recombinant protein genes via IRES sequence in insect cell expression system for rapid and concise selection of the producer cell line, Pasteur Institute of Iran.

Activities:

- § Contribution to “The 17th Seminar of Iranian Pharmacy students” as a scientific referee, Oct. 2012, Kermanshah, Iran.
- § Contribution to 13th Iranian Pharmaceutical Sciences Congress, as a scientific referee, 2012, Isfahan, Iran.
- § Contribution to “The 1st International Congress on Health Genomics and Biotechnology” and “The 4th Iranian Congress of Genetic Disorders and Disabilities” as a coordinator of the scientific secretariat activities, 24-26 Nov. 2007, Tehran, Iran.
- § Contribution to “The 13th Seminar of Iranian Pharmacy students” as a scientific referee, Oct. 23-26 2007, Tabriz, Iran.
- § Contribution to “The 11th Seminar of Iranian Pharmacy students” as representative of Isfahan pharmacy schools’ students, Nov. 9-11 2005, Shiraz, Iran.
- § Contribution to “The 7th seminar of Iranian Pharmacy students” as a member of executive committee, February 2001, Isfahan, Iran.

Positions:

- § Head of General Research Lab, Isfahan University of Medical Sciences and Health Services, Isfahan, Iran. Oct. 2014 to present.
- § Deputy Dean of Research, Faculty of Pharmacy, Isfahan University of Medical Sciences and Health Services, Isfahan, Iran. Jan. 2014 to present.
- § Head of Department of Pharmaceutical Biotechnology Department, Faculty of Pharmacy, Isfahan University of Medical Sciences and Health Services, Sep. 2013 to present
- § Head of Student Research Committee, Pharmacy School, Isfahan University of Medical Sciences and Health Services. May 2013 to present
- § Head of Student Research Committee, Pharmacy School, Isfahan University of Medical Sciences and Health Services, 2004-2006

Honors and Awards:

- § Awarded as the Best Manager of the Student Research Committees of Isfahan University of Medical Sciences and Health Services, Research Week, 2005.
- § Awarded for the best translated book of the year, Isfahan University of Medical Sciences and Health Services, Research Week, 2006.

Teaching Experiences

- Molecular Biology and Genetics
- Pharmaceutical Biotechnology: Monoclonal Antibody, Growth Factors and Cytokines, Therapeutic Enzymes and Protein Hormones, Nucleic acids and Cell Based Therapeutics
- Microbial Control of Pharmaceutical Products
- Quality Control of Biopharmaceuticals
- Genetic Engineering
- Vaccine production and cancer vaccines
- Bioprocess engineering: Bioreactor design, Upstream and Downstream processing
- Baculovirus and insect cell expression systems
- Bioinformatics

Training and Courses:

- § Advanced molecular genetics course
- § Real-time PCR
- § Flow cytometry
- § Protein Expression and Purification
- § Monoclonal Antibody Production

Laboratory skills:

- § Molecular cloning related techniques
- § Cell culture
- § *E. coli* expression system
- § Baculovirus expression system
- § Non-lytic insect cell expression system

- § Mammalian Expression system
- § Flow cytometry
- § Real Time/RT-PCR
- § Laboratory Animal handling
- § Production and purification of Rabbit polyclonal antibodies

Computer Skills:

- § Operating Systems: Dos, NC, Microsoft™ Windows™ 9x, XP™, Vista™, Seven™
- § Microsoft Office 2013 (Word, PowerPoint, Excel)
- § SPSS 17
- § Vector NTI, CLC Work Bench, Gene Runner
- § Graphic: Adobe Photoshop CS2
- § 2D Animation: Adobe Flash MX
- § Reference Manager, EndNote X7
- § Presi