

In the name of God

Curriculum Vitae

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Last updated: August 2021

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PhD. in Pharmaceutical Biotechnology (2013-2018)

-Department of Pharmaceutical Biotechnology, Faculty of Pharmacy, Shiraz University of Medical Sciences, Shiraz, Iran.

Pharm.D. (2004-2010)

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Cloning and expression of streptokinase in *Escherichia coli*

Supervisor: Dr. Younes Ghasemi

Subject of PhD Thesis:

Magnetic immobilization of recombinant *E.coli* by iron oxide nanoparticles and evaluation of plasmid stability and excretion of L.asparaginase II

Supervisors: Dr. Younes Ghasemi, Dr Alireza Ebrahiminezhad.

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Publications:

Research Papers:

1) Ghasemi Y, Rasoul-amini S, Morowvat MH, Moasavi-Azam SB, Shokravi S, Mohagheghzadeh A, Ghoshoon MB, **Raee MJ** (2008) Bioconversion of hydrocortisone by unicellular microalga *Oocystis pusilla*. **Biotechnology**, 7 (2): 293-298.

2) Ghasemi Y, Rasoul-amini S, Morowvat MH, , Ghoshoon MB, **Raee MJ**, Nouri F, Negintaji N, Parvizi R, Mosavi-Azam SB (2008) Characterization of hydrocortisone biometabolites and 18S rRNA gene in *Chlamydomonas reinhardtii* cultures. **Molecules**, 13 (10): 2416-2425.

- 3) Ghasemi Y, Ebrahimezhad A, Rasoul-Amini S, Zarrini G, Ghoshoon MB, **Raee MJ**, Morowvat MH, Kafilzadeh F, Kazemi A (2008) An optimized medium for screening of L-asparaginase production by *Escherichia coli*. **American Journal of Biochemistry and Biotechnology**, 4 (4): 422-424.
- 4) Ghasemi, Y, Rasoul-Amini S, Morowvat M H, **Raee M J**, Ghoshoon M B, Nouri F, Negintaji N, Parvizi R, Mosavi Azam S, Shokravi S (2008) Dehydrogenation, C-20 ketone reduction and side-chain cleavage of hydrocortisone in *Chlamydomonas reinhardtii* cultures. **Molecules**, 13 (10), 2416-2425.
- 5) Ghasemi Y, Mohagheghzadeh A, Moshavash M, Ostovan Z, Rasoul-Amini S, Morowvat MH, Ghoshoon MB, **Raee MJ**, Mosavi-Azam SB (2009) Biotransformation of monoterpenes by *Oocystis pusilla*. **World Journal of Microbiology and Biotechnology**, 25: 1301-1304.
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- 8) Ghasemi Y, Rasoul-amini S, Morowvat MH, , Ghoshoon MB, **Raee MJ**, Khoubani S, Negintaji N, Nouri F, Shokravi S (2009) C-20 Ketone Reduction of Hydrocortisone by a rice field microalga *Chlorella vulgaris* MCCS 013. **Chemistry of Natural Compounds**, 45(6): 824-828
- 9) **Raee MJ**, Ghasemi Y , Ghasemiyan A, Ghoshoon MB, Maghami S (2013) Cloning, purification and enzymatic assay of streptokinase gene from *Streptococcus pyogenes* in *Escherichia coli*. **Minerva Biotechnologica**, 29(1): 8-13
- 10) **Raee MJ**, Maghami S, Ghoshoon MB, Zamani M, Mohkam M, Rasoul-Amini S, Ghasemi Y (2013) Characterization, bioinformatics analysis and cloning of CYP152A1 gene from *Bacillus subtilis* in *Escherichia coli*. **Minerva Biotechnologica**, 28(1): 12-18
- 11) Ghasemi Y, Afrasiabi N, Ebrahimi N, Ghoshoon MB, Nezafat N, Zamani M and **Raee MJ** (2016) Cloning, expression and characterization of *CYP109B1* gene from *Bacillus subtilis*, **Minerva Biotechnologica**, 28(2): 81-85

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15) **Raee MJ**, Ebrahiminezhad A, Gholami A, Ghoshoon M B and Ghasemi Y (2018) Magnetic immobilization of recombinant *E.coli* producing extracellular asparaginase: An effective way to intensify downstream process, **Separation Science and Technology**, 53(9): 1397–1404

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Nucleotide sequences insertion at gene bank (NCBI):

- 1) Ghasemi Y, Morowvat MH, Mohagheghzadeh A, Rasoul Amini S, Ghoshoon MB, **Raee M J**, Shokravi S, Soltani N, (2007), PCR amplification of 18S small subunit rRNA of *Scenedesmus obliquus*, isolated from paddy fields of Fars province, **NCBI**, EF564131.
- 2) Ghasemi Y, Morowvat MH, Mohagheghzadeh A, Rasoul Amini S, Ghoshoon MB, **Raee MJ**, Shokravi S, (2007), PCR amplification of 18S small subunit rRNA of *Chlorella vulgaris*, isolated from south of Iran, **NCBI**, EF564130.
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- 13) Ghasemi Y, Morowvat MH, Rasoul Amini S, Mohagheghzadeh A, Ghoshoon MB, **Raee MJ**, Shokravi S, (2008), PCR amplification of 16S rRNA gene of *Oscillatoria splendida* MCCS 019, isolated from soil sample in the Fars province of Iran, **NCBI**, EU621365.
- 14) Ghasemi Y, Morowvat MH, **Raee MJ**, Ghoshoon MB, Shokravi S, (2008), PCR amplification of 18S rRNA gene from fresh water microalga, *Scenedesmus rubescens* MCCS 018, isolated from south of Iran, **NCBI**, EU621364.
- 15) Ghasemi Y, Morowvat MH, Ghoshoon MB, **Raee M J**, Shokravi S, (2008), Characterization of 16S rRNA gene of *Nostoc corneum* MCCS 020, isolated from soil sample in the Fars province of Iran, **NCBI**, EU621366.
- 16) Ghasemi Y, Rasoul-Amini S, Morowvat MH, Ghoshoon MB, **Raee MJ**, Mosavi- Azam SB, (2008), Microbial metabolism of pinen by immobilized cells of *Oscillatoria amphibia* MCCS 021, **NCBI**, FJ210469.
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- 20) Ghasemi Y, Kazemi A, Zarrini G, Kargar M, Rasoul-Amini S, Ghoshoon MB, Morowvat M H, **Raee MJ**, Ebrahiminezhad A, (2008), Isolation and identification of halophilic lipase-producing bacteria from the Maharlu salt lake in south of Iran, **NCBI**, FJ411178.
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- 22) Ghasemi Y, Kazemi A, Zarrini G, Kargar M, Ghoshoon MB, **Raee MJ**, Morowvat MH, Ebrahiminezhad A, (2008), Characterization of lipase activity and 16S rRNA gene of *Bacillus subtilis* BCCS 005, **NCBI**, FJ422563.
- 23) Ghasemi Y, Kazemi A, Zarrini G, Kargar M, Ghoshoon M B, **Raee MJ**, Morowvat MH, Ebrahiminezhad A, Sadeghi M, Abbaszadeh S, Hemayatkhah-Jahromi V, (2008), Characterization of 16S rRNA gene of *Bacillus amyloliquefaciens* BCCS 006, **NCBI**, FJ422564.
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- 25) Ghasemi Y, Kazemi A, Rasoul-Amini S, Zarrini G, Kargar M, Ghoshoon MB, **Raee MJ**, Morowvat MH, Ebrahiminezhad A, Parsaei-Ghaderabadi K, (2008), Characterization of the 16S small subunit rRNA and lipase activity of *Bacillus aquimaris* BCCS 008, **NCBI**, FJ422566.
- 26) Ghasemi Y, Kazemi A, Rasoul-Amini S, Zarrini G, Kargar M, Ghoshoon MB, Morowvat MH, **Raee MJ**, Ebrahiminezhad A, Parsaei-Ghaderabadi K, (2008), Characterization of lipase activity of *Bacillus endophyticus* BCCS 011, **NCBI**, FJ422567.
- 27) Ghasemi Y, Kazemi A, Rasoul-Amini S, Zarrini G, Kargar M, Ghoshoon MB, Morowvat MH, **Raee MJ**, Ebrahiminezhad A, Parsaei-Ghaderabadi K, (2008), PCR amplification of 16S rRNA gene of *Staphylococcus epidermidis* BCCS 009, isolated from the Lake Maharlu, **NCBI**, FJ422568.

- 28) Ghasemi Y, Kazemi A, Rasoul-Amini S, Zarrini G, Kargar M, Ghoshoon MB, Morowvat MH, **Raee MJ**, Ebrahimezhad A, Parsaei-Ghaderabadi K, (2008), Isolation and identification of a halophilic lipase-producing bacterium, *Aeromonas veronii* BCCS 010, from the Maharlu salt lake in south of Iran, **NCBI**, FJ422569.
- 29) Ghasemi Y, Kazemi A, Rasoul-Amini S, Zarrini G, Kargar M, Ghoshoon MB, Morowvat MH, **Raee MJ**, Ebrahimezhad A, Parsaei-Ghaderabadi K, (2008), Characterization of 16S small subunit rRNA of a halophilic bacterium, *Bacillus subtilis* BCCS 012, **NCBI**, FJ422570.
- 30) Ghasemi Y, Kazemi A, Rasoul-Amini S, Zarrini G, Kargar M, Ghoshoon MB, Morowvat MH, **Raee MJ**, Ebrahimezhad A, Parsaei-Ghaderabadi K, (2008), Bacterial diversity of sediment of the Maharlu salt lake in south of Iran, **NCBI**, FJ422571.
- 31) Ghasemi Y, Kazemi A, Rasoul-Amini S, Zarrini G, Kargar M, Ghoshoon MB, Morowvat MH, **Raee MJ**, Ebrahimezhad A, Parsaei-Ghaderabadi K, (2008), Characterization of 16S rRNA gene and lipase activity of *Bacillus pumilus* BCCS 014, **NCBI**, FJ422572.
- 32) Ghasemi Y, Kazemi A, Rasoul-Amini S, Zarrini G, Kargar M, Ghoshoon MB, Morowvat MH, **Raee MJ**, Ebrahimezhad A, Parsaei-Ghaderabadi K, (2008), Bacterial diversity of sediment of the Maharlu salt lake in south of Iran, *Bacillus pumilus* BCCS 013 **NCBI**, FJ422571.
- 33) Ghasemi Y, Kazemi A, Rasoul-Amini S, Zarrini G, Kargar M, Ghoshoon MB, Morowvat MH, **Raee MJ**, Ebrahimezhad A, Parsaei-Ghaderabadi K, (2008), Isolation and identification of halophilic lipase-producing bacteria from the Maharlu salt lake in south of Iran, *Bacillus pumilus* BCCS 003 **NCBI**, FJ392547.
- 34) Ghasemi Y, Kazemi A, Rasoul-Amini S, Zarrini G, Kargar M, Morowvat MH, Ghoshoon MB, **Raee MJ**, Ebrahimezhad A, Parsaei-Ghaderabadi K, (2008), Phylogenetic diversity of cultural bacteria from the Maharlu salt lake in south of Iran, **NCBI**, FJ422573.
- 35) Ghasemi Y, Kazemi A, Rasoul-Amini S, Ghoshoon MB, Morowvat MH, **Raee MJ**, Ebrahimezhad A, (2008), PCR amplification of the 16S rRNA gene of *Chryseobacterium taeanense* BCCS 016 isolated from the Maharlu salt lake in south of Iran, **NCBI**, FJ422574.
- 36) Ghasemi Y, Rasoul-Amini S, Kazemi A, Mousavi-Khorshidi S, Zarrini G, Ghoshoon MB, **Raee MJ**, Morowvat MH, Ebrahimezhad A, (2008), Characterization of amylase activity and 16S rRNA gene of *Halomonas aquamarina* BCCS 017, **NCBI**, FJ422575.
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- 38) Ghasemi Y, Rasoul-Amini S, Mousavi-Khorshidi S, Kazemi A, Zarrini G, Ghoshoon MB, **Raee MJ**, Morowvat MH, Ebrahiminezhad A, (2008), PCR amplification of the 16S rRNA gene of *Rheinheimera aquimaris* BCCS 019 isolated from the Maharlu salt lake in south of Iran, **NCBI**, FJ422577.
- 39) Ghasemi Y, Rasoul-Amini S, Ghoshoon MB, **Raee MJ**, Kazemi A, Mousavi- Khorshidi S, Morowvat MH, Ebrahiminezhad A, (2008), Characterization of 16S Rrna gene of *Bacillus endophyticus* BCCS 020, **NCBI**, FJ422578.
- 40) Ghasemi Y, Rasoul-Amini S, **Raee MJ**, Ghoshoon MB, Mousavi-Khorshidi S, Kazemi A, Morowvat MH, Ebrahiminezhad A, (2008), Characterization of starchdigesting activity and 16S ribosomal RNA gene of *Bacillus muralis* BCCS 021, **NCBI**, FJ422579.
- 41) Ghasemi Y, Rasoul-Amini S, **Raee MJ**, Ghoshoon MB, Mousavi-Khorshidi S, Kazemi A, Morowvat MH, Ebrahiminezhad A, (2008), Characterization of 16S rRNA gene of *Bacillus endophyticus* BCCS 022, a halophilic amylase-producing bacterium isolated from the Maharlu salt lake in south of Iran, **NCBI**, FJ422580.
- 42) Ghasemi Y, Rasoul-Amini S, Ghoshoon MB, **Raee MJ**, Mousavi-Khorshidi S, Kazemi A, Morowvat MH, Ebrahiminezhad A, (2008), PCR amplification of the 16S rRNA gene of *Rheinheimera aquimaris* BCCS 023, **NCBI**, FJ422581.
- 43) Ghasemi Y, Rasoul-Amini S, Ghoshoon MB, **Raee MJ**, Mousavi-Khorshidi S, Kazemi A, Morowvat MH, Ebrahiminezhad A, Parsaei-Ghaderabadi K, (2008), Isolation and identification of halophilic amylase-producing bacteria from the Maharlu salt lake in southern Iran, **NCBI**, FJ426405.
- 44) Ghasemi Y, Rasoul-Amini S, **Raee MJ**, Ghoshoon MB, Mousavi-Khorshidi S, Kazemi A, Morowvat MH, Ebrahiminezhad A, Parsaei-Ghaderabadi K, (2008), Isolation and identification of halophilic amylase-producing bacteria from the Maharlu salt lake in southern Iran, **NCBI**, FJ429320.
- 45) Ghasemi Y, Rasoul-Amini S, **Raee MJ**, Ghoshoon MB, Mousavi-Khorshidi S, Kazemi A, Morowvat MH, Ebrahiminezhad A, Parsaei-Ghaderabadi K, (2008), Isolation and identification of halophilic amylase-producing bacteria from the Maharlu salt lake in southern Iran, **NCBI**, FJ429321.
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- 54) Ghasemi Y, Rasoul-Amini S, Ghoshoon MB, **Raee MJ**, Kazemi A, Morowvat MH, Ebrahiminezhad A, (2009), Isolation and identification of halophilic amylase-producing bacterium, *Rheinheimera* sp. BCCS 035, **NCBI**, FJ619743.
- 55) Ghasemi Y, Rasoul-Amini S, Ghoshoon MB, **Raee MJ**, Kazemi A, Morowvat MH, Ebrahiminezhad A, (2009), PCR amplification of 16S small subunit rRNA of a halophilic bacterium, *Bacillus* sp. BCCS 036, **NCBI**, FJ619744.
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- 57) Ghasemi,Y., Rasoul-Amini,S., Ghoshoon,M.B., Raei,M.J., Mousavi-Khorshidi,S., Kazemi,A., Morowvat,M.H., Ebrahiminezhad,A. and Parsaei-Ghaderabadi,K. (2009) Isolation and identification of halophilic amylase-producing bacteria from the Maharlu salt lake in southern Iran, *Bacillus endophyticus* strain BCCS 024, **NCBI**, FJ426405.1.
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Abstracts and Congress presentations:

1) **Raee MJ**, Morowvat MH, Ghoshoon MB, Ghasemi Y, Mohagheghzadeh A, Shokravi S. PCR amplification of cyanobacterial 16S rRNA gene isolated from south of Iran. The 12th Seminar of Iranian Pharmacy Students, November, 1-3, 2006, Sari, Iran, 39.

2) Ghoshoon MB., Morowvat MH, Ghasemi Y, Rasoul Amini S, **Raee MJ**, Mohagheghzadeh A, Shokravi S, Characterization of antimicrobial activity and 16S rRNA gene of *Nostoc muscorum*, The 13th Seminar of Iranian Pharmacy Students, November, 1-3, 2007, Tabriz, Iran, 34.

3) Morowvat M H, **Raee MJ.**, Ghoshoon MB., Ghasemi Y, Rasoul Amini S, Mohagheghzadeh A, Shokravi S. *Scenedesmus*, SCP and PCR amplification of 18S rRNA, The 9th Iranian Congress of Biochemistry & the 2nd International Congress of Biochemistry and Molecular Biology, Shiraz, Iran, Oct.29-Nov, 1, 2007, 179.

4) Ghoshoon MB, Morowvat MH, **Raee MJ**, Moshavash M, Shokravi S, Mohagheghzadeh A, Rasoul-Amini S, Ghasemi Y; Metabolism of limonen and characterization of 18s rRNA gene in *Chlorella vulgaris* MCCS 012. 11th Iranian Pharmaceutical Sciences Conference (IPSC). August 18-21, 2008, Kerman, Iran, 80.

5) Mosavi-Azam SB, **Raee MJ**, Ghoshoon MB, Morowvat MH, Mohagheghzadeh A, Rasoul-Amini S, Ghasemi Y; In vivo bioconversion of carvone and menthone by *Desmodesmus communis* MCCS 010. 11th Iranian Pharmaceutical Sciences Conference (IPSC). August 18-21, 2008, Kerman, Iran, 81.

6) Yavari F, Ghoshoon MB, Morowvat MH, **Raee MJ**, Mohagheghzadeh A, Zarrini G, Rasoul-Amini S, Ghasemi Y; Characterization of antibacterial activity and 16S rRNA gene of *Chroococcus dispersus* MCCS 006. 11th Iranian Pharmaceutical Sciences Conference (IPSC). August 18-21, 2008, Kerman, Iran, 82.

7) Mosavi-Khorshidi S, Kazemi A, Ghoshoon MB, **Raee MJ**, Morowvat MH, Zarrini G, Rasoul-Amini S, Ghasemi Y; Charcterization of halophilic amylase-producing bacteria from the Maharlu salt lake. 11th Iranian Pharmaceutical Sciences Conference (IPSC). August 18-21, 2008, Kerman, Iran, 83.

8) Khoubani S, Ghoshoon MB, **Raee MJ**, Zarrini G, Rasoul-Amini S, Ghasemi Y; Charcterization of antibacterial activity and 16S rRNA gene of *Nostoc ellipsosporum* MCCS 005. 11th Iranian Pharmaceutical Sciences Conference (IPSC). August 18-21, 2008, Kerman, Iran, 83.

9) Kazemi A, Ghoshoon MB, **Raee MJ**, Ebrahiminezhad A, Parasaei-Ghaderabadi K, Kargar M, Zarrini G, Rasoul-Amini S, Ghasemi Y, Morowvat MH; Isolation And Molecular Identification Of *Bacillus* Spp. Producing Lipase From The Maharlu Salt Lake. 2th International Student Conference of Biotechnology, November 15-17, 2008, Tehran, Iran.

10) Ebrahiminezhad A, Ghoshoon MB, **Raee MJ**, Kazemi A, Parasaei-Ghaderabadi K, Kafilzadeh F, Zarrini G, Rasoul-Amini S, Ghasemi Y; An Optimized Medium For Screening L-Asparaginase Producing *Escherichia Coli*. 2th International Student Conference of Biotechnology, November 15-17, 2008, Tehran, Iran.

11) Parasaei-Ghaderabadi K, Ebrahiminezhad A, Ghoshoon MB, **Raee MJ**, Kazemi A, Kafilzadeh F, Rasoul-Amini S, Ghasemi Y; Screening of Polyhydroxyalkanoates-Producing Bacteria From Different Contaminated Environments. 2th International Student Conference of Biotechnology, November 15-17, 2008, Tehran, Iran.

12) Ghoshoon MB, **Raee MJ**, Mosavi-Azam SB, Kazemi A, Ebrahiminezhad A, Morowvat MH, Rasoul-Amini S, Ghasemi Y; Crude Petroleum-Oil Biodegradation By Immobilized Cells Of *Chlorella Vulgaris* Mccs 011. 2th International Student Conference of Biotechnology, November 15-17, 2008, Tehran, Iran.

13) **Raee MJ**, Ghoshoon MB, Mosavi-Azam SB, Kazemi A, Ebrahiminezhad A, Morowvat MH, Rasoul-Amini S, Ghasemi Y; Alkane Biodegradation In Immobilized Cells Of *Desmodesmus Communis* Mccs 010. 2th International Student Conference of Biotechnology, November 15-17, 2008, Tehran, Iran.

14) Ghoshoon MB, **Raee MJ**, Ebrahiminezhad A, Kazemi A, Morowvat MH, Rasoul- Amini S, Ghasemi Y; Cloning, expression and characterization of *Escherichia coli* (BCCS 001) L-asparaginase II. 14th Seminar of Iranian Pharmacy Students, February, 11-14, 2009, Ahvaz, Iran, 83.

15) Jani M, Kazemi A, Ghoshoon MB, Morowvat MH, **Raee MJ**, Rasoul- Amini S, Ghasemi Y; Biodiesel production from a naturally isolated strain of *Chlorella vulgaris*. 14th Seminar of Iranian Pharmacy Students, February, 11-14, 2009, Ahvaz, Iran, 84.

16) **Raee MJ**, Ghoshoon MB, Ebrahiminezhad A, Kazemi A, Morowvat MH, Rasoul- Amini S, Ghasemi Y; Cloning and expression of L-asparaginase II gene of *Shigella* in *E.coli*. 14th Seminar of Iranian Pharmacy Students, February, 11-14, 2009, Ahvaz, Iran, 85.

17) Mosavi-Azam SB, Ebrahiminezhad A, Ghoshoon MB, Jani M, **Raee MJ**, Parvizi R, Rasoul- Amini S, Ghasemi Y; Screening and characterization of L-asparaginase production by microalgae. The 14th Seminar of Iranian Pharmacy Students, February, 11-14, 2009, Ahvaz, Iran, 74.

18) Parvizi R, Mardani Z, Negintaji N, **Raee MJ**, Ghoshoon MB, Morowvat MH, Rasoul- Amini S, Ghasemi Y; Production of long chain omega-3 fatty acids by *Scenedesmus rubescens*. The 14th Seminar of Iranian Pharmacy Students, February, 11-14, 2009, Ahvaz, Iran, 75.

19) Mardani Z, Parvizi R, Ghoshoon MB, **Raee MJ**, Morowvat MH, Rasoul- Amini S, Ghasemi Y; Microalgal metabolisms of some monoterpenoids ketones by immobilized cells culture of *Chlorella vulgaris*. The 14th Seminar of Iranian Pharmacy Students, February, 11-14, 2009, Ahvaz, Iran, 77.

20) Khubani S, Yavari F, Mosavi-Azam SB, Ghoshoon MB, **Raee MJ**, Morowvat MH, Rasoul- Amini S, Ghasemi Y; Fatty acid evaluation in a natural isolate of *Chlorella vulgaris*. 14th Seminar of Iranian Pharmacy Students, February, 11-14, 2009, Ahvaz, Iran, 78.

21) Yavari F, Khubani S, Parvizi R, Mardani Z, **Raee MJ**, Ghoshoon MB, Morowvat MH, Rasoul- Amini S, Ghasemi Y; PCR amplification of the molecular black box, 16S rRNA from three Cyanobacterial species. 14th Seminar of Iranian Pharmacy Students, February, 11-14, 2009, Ahvaz, Iran, 79.

22) Raoufi SM, Ghoshoon MB, **Raee MJ**, Rasoul- Amini S, Ghasemi Y; Biotransformation of testosterone by immobilized cells of *Chlamydomonas reinhardtii*.14th Seminar of Iranian Pharmacy Students, February, 11-14, 2009, Ahvaz, Iran, 80.

23) Maghami S, Mosavi-Azam SB, Ghoshoon MB, **Raee MJ**, Rasoul- Amini S, Ghasemi Y; Oil degradation by immobilized cells of *Synechococcus nidulans*.14th Seminar of Iranian Pharmacy Students, February, 11-14, 2009, Ahvaz, Iran, 81.

24) Hosseini H, Kazemi A, Ebrahiminezhad A, Ghoshoon MB, **Raee MJ**, Rasoul- Amini S, Ghasemi Y; Isolation and characterization of cellulase-producing bacteria from a hot spring in the south of Iran.14th Seminar of Iranian Pharmacy Students, February, 11-14, 2009, Ahvaz, Iran, 82.

Workshops

1) Molecular modeling, Shiraz University of Medical Sciences, Faculty of pharmacy, June 2008, Shiraz, Iran.

2) Introduction to NCBI gene bank, Shiraz University of Medical Sciences, Faculty of pharmacy May 2008, Shiraz, Iran. **(As teacher)**

3) Scopus Database, Shiraz University of Medical Sciences, Faculty of pharmacy, Dec 2008, Shiraz, Iran.

4) PCR and Gene Sequencing, Shiraz University of Medical Sciences, Faculty of pharmacy, Feb 2009, Shiraz, Iran. **(As teacher)**

5) Endnote software, Shiraz University of Medical Sciences, student research council, August 2010, Shiraz, Iran.

6) Bioinformatics and its Application in Biotechnology, Nineteenth Iranian Pharmacy Students' Seminar, Shiraz University of Medical sciences, 2015, Shiraz, Iran. **(As teacher)**

7) How to write a proposal, Shiraz University of Medical Sciences, Faculty of pharmacy, June 2021, Shiraz, Iran. **(As teacher)**

Laboratory and Technical skills:

- Escherichia coli* based expression system
- Yeast based expression system
- Gene cloning
- Protein expression and purification
- Primer Design
- FTIR

- UV- Vis Spectrophotometry
- Protein Assay
- Immobilization of recombinant cells
- Real Time PCR
- DNA electrophoresis
- SDS-PAGE
- Biotransformation of organic compounds by microorganisms.
- Microalgal Biotechnology
- Isolation of Microorganisms from Nature and Screening them for Production of Bioactive Compounds
- Bioinformatics
- Bioremediation
- Cell Culture (Bacteria, Microalgae, Yeast, Mamalian cells)
- 16S rRNA and 18S rRNA amplification of Microalgae, Bacteria and Plants

- Synthesis of nanoparticles
- Cell fixation
- Plasmid Stability studies
- Anti-microbial Tests

Research interests:

- Nanobiotechnology
- Magnetic nanoparticles
- Bioinformatics
- In-silico studies
- Immobilization
- Purification of recombinant proteins
- Biocatalysts
- Enzyme Technology
- Microalgal Biotechnology
- Biotransformation of Organic Compounds by Microalgae.
- Isolation and Identification of Antimicrobial-producing Microalgae from Nature.
- Extraction, Purification and Structure Elucidation of Natural Products from Plants and Microalgae.
- Single Cell Protein production from Microalgae.