

Curriculum Vitae of Fatemeh Soltani

Contact Details

Department of Biotechnology, School of Pharmacy, Mashhad University of Medical Sciences, P. O. Box: 91775-1365, Mashhad, Iran.

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Academic Background

2006 – 2013: PhD in Pharmaceutical Biotechnology, Mashhad University of Medical Sciences, Mashhad, Iran.

Thesis Title: Biosynthesis and characterization of a nanoparticle gene delivery system composed of two repeating units of histone H1 and a breast cancer specific targeting peptide.

Supervisors: Prof. Mohammad Ramezani (Mashhad University of Medical Sciences, Iran), Dr. Arash Hatefi (Rutgers University, USA)

2010-2011: Visiting Scholar, (Vaccine development), University of Queensland, Brisbane, Australia

Supervisor: Prof. Istvan Toth (University of Queensland, Australia)

1995 – 2001: Pharm.D, Kerman University of Medical Sciences, Kerman, Iran

Thesis Title: Synthesis of new nifedipine derivatives with methylimidazole substituent. **Supervisor:** Prof. Alireza Foroumadi (Tehran University of Medical Sciences, Iran)

1998: Visiting course in DarouPakhsh pharmaceutical company, Tehran, Iran

Awards and Recognitions

2011: The best poster presentation, PhD student's research festival, Mashhad, Iran.

2011: The best poster presentation, International control release congress, Mashhad, Iran.

2009: National Prize for the top PhD student, Mashhad, Iran.

2009: The best poster presentation, the Avesina research center seminar, Mashhad, Iran.

2008: The best English oral presentation, The 11th Iranian pharmaceutical sciences conference, Kerman, Iran.

2006: Ranked first among students in the PhD entrance exam

Research Interests

- Drug delivery and non-viral gene delivery systems based on recombinant proteins, polymers, liposomes and micelles.
- Toxic and therapeutic peptides and conjugates
- DNA damage

Experiences and Skills

Laboratory Techniques: Cell culture methods, Chemical synthesis, Solid phase peptide synthesis using Fmoc and Boc Strategies, Cytotoxicity assays, Gel electrophoresis, Genotoxicity assay (Single cell gel electrophoresis (Comet Assay)), SDS-PAGE, Western blot, Plasmid, DNA and RNA extraction, PCR, Microbial culture, Cloning, Genetic engineering, Recombinant protein expression, Protein purification, Affinity chromatography, FPLC, Analytical and preparative HPLC, Primer design, Small molecule and peptide characterization using different methods (GC, H-NMR, HPLC, Mass spectroscopy,..), and etc.

Publications

Papers:

1. Arabzadeh S, Amiri Tehranizadeh Z, Moalemzadeh Haghghi H, Charbgo F, Ramezani M, **Soltani F**, Design, synthesis and in vitro evaluation of low molecular weight protamine (LMWP) - based amphiphilic conjugates as gene delivery carriers. AAPS PharmSciTech. 2019, In press. (IF:2.66)
2. Faraji H, Ramezani M, Meshkani B, Sadeghnia HR, Hosseini Teshnizi S, **Soltani F**. Comparison of Expression Optimization of New Derivative of Staphylokinase (SAK-2RGD-TTI) with the rSAK. Biotechnol Prog. 2019, In press. (IF: 1.94)
3. Jafari F, Baghayi H, Lavaee P, Hadizadeh F, **Soltani F**, Moallemzadeh H, Mirzaei S, Aboutorabzadeh SM, Ghodsi R. Design, synthesis and biological evaluation of novel benzo- and tetrahydrobenzo-[h]quinoline derivatives as potential DNA-intercalating antitumor agents. Eur J Med Chem. 2019; 164:292-303. (IF: 4.81)
4. Dehghani S, Nosrati R, Yousefi M, Nezami A, **Soltani F**, Taghdisi SM, Abnous K, Alibolandi M, Ramezani M. Aptamer-based biosensors and nanosensors for the detection of vascular endothelial growth factor (VEGF). Biosens Bioelectron. 2018; 19: 110:23-37. (IF: 8.1)
5. Charbgo F, Nejabat, M, Abnous, K, **Soltani F**, Taghdisi S.M, Alibolandi M, Thomas Shier W, Steele T.W, Ramezani M. Gold nanoparticle should understand protein corona for being a clinical nanomaterial. J Controlled Release. 2018; 272: 39-53. (IF: 7.87)
6. Charbgo F, Alibolandi M, Taghdisi SM, Abnous K, **Soltani F**, Ramezani M. MUC1 aptamertargeted DNA micelles for dual tumor therapy using doxorubicin and KLA peptide. Nanomedicine. 2018;14:685-69. (IF: 6.5)
7. Sabahi Z, Moein M.R, Farmani F, Soltani F. DNA protection, antioxidant and Xanthin oxidase inhibition activities of polyphenol-enriched fractions of Berberis integerrima Bunge fruits. Iran J Basic Med Sci. 2018; 2: 411–416. (IF: 1.5)
8. Sabahi Z, **Soltani F**, Moein M. R. Insight into DNA protection ability of medicinal herbs and potential mechanisms in hydrogen peroxide damages model. Asian Pac J Trop Biomed. 2018; 8:120129. (IF: 1.63)
9. **Soltani F**, Ramezani M, Amel Farzad S, Mokhtarzade A, Hashemi M. Comparison study of the effect of alkyl-modified and unmodified PAMAM and PPI dendrimers on solubility and antitumor activity of crocetin. Artif Cells Nanomed Biotechnol. 2017; 45:1356-1362. (IF: 5.6)
10. Arab A, Yazdian-Robati R, Rezaei-Seresht H, Ehtesham-Gharaee M, **Soltani F**. Evaluation of neuroprotective effect of althaea officinalis flower aqueous and methanolic extracts against H2O2induced oxidative stress in PC12 cells. Iranian J Pharm Sci. 2017; 13: 49-56.
11. Faraji H, Ramezani M, Sadeghnia HR, Abnous K, **Soltani F**, Mashkani B. High-level expression of a biologically active staphylokinase in Pichia pastoris. Prep Biochem Biotechnol. 2017; 47: 379-387. (IF: 1.36)
12. Charbgo F, **Soltani F**, Taghdisi SM, Abnous K, Ramezani M, Nanoparticles application in high sensitive aptasensor design. TrAC - Trends in Analytical Chemistry. 2016; 85: 85-97. (IF: 7)
13. Alavizadeh SH, **Soltani F**, Ramezani M: Recent Advances in Immunoliposome-Based Cancer Therapy. Curr Pharmacol Rep. 2016; 2: 129–141.
14. Aldaghi L, Rad A, Arab A, Kasaeian J, Iranshahi M, Sadr A.S, **Soltani F**: In Silico and In Vitro Evaluation of Cytotoxic Activities of Farnesiferol C and Microlobin on MCF-7, Hela and KYSE Cell Lines. Drug Res. 2016; 66: 532-538.
15. **Soltani F**, Parhiz H, Mokhtarzadeh A, Ramezani M: Synthetic and Biological Vesicular NanoCarriers Designed for Gene Delivery. Curr Pharm Des. 2015; 21: 6214-35. (IF: 2.61)
16. Roohbakhsh A, Parhiz H, **Soltani F**, Rezaee R, Iranshahi M: Molecular mechanisms behind the biological effects of hesperidin and hesperetin for the prevention of cancer and cardiovascular diseases. Life Sci. 2015; 124: 64-74. (IF: 2.93)

17. Iranshahi M, Rezaee R, Parhiz H, Roohbakhsh A, **Soltani F**: Protective effects of flavonoids against microbes and toxins: The cases of hesperidin and hesperetin. *Life Sci.* 2015; 137:125-132. **(IF: 2.93)**
18. Parhiz H, Roohbakhsh A, **Soltani F**, Rezaee R, Iranshahi M: Antioxidant and Anti-Inflammatory Properties of the Citrus Flavonoids Hesperidin and Hesperetin: An Updated Review of their Molecular Mechanisms and Experimental Models. *Phytother. Res.* 2015; 29: 323-31. **(IF: 3)**
19. Roohbakhsh A, Parhiz H, **Soltani F**, Rezaee R, Iranshahi M.: Neuropharmacological properties and pharmacokinetics of the citrus flavonoids hesperidin and hesperetin-a mini-review. *Life Sci.* 2014; 113:1-6. **(IF: 2.93)**
20. Jamialahmadi K, **Soltani F**, Nabavi Fard M, Behravan J, Mosaffa F: Assessment of protective effects of glucosamine and N-acetyl glucosamine against DNA damage induced by hydrogen peroxide in human lymphocytes. *Drug Chem Toxicol.* 2014; 37:427-32. **(IF: 1.73)**
21. Rezaee R, Behravan E, Behravan J, **Soltani F**, Naderi Y, Emami B, Iranshahi M.:Antigenotoxic activities of the natural dietary coumarins umbelliferone, herniarin and 7-isopentenylcoumarin on human lymphocytes exposed to oxidative stress. *Drug Chem Toxicol.* 2014; 37:144-8. **(IF: 1.73)**
22. **Soltani F**, Sankian M, Hatefi A, Ramezani M.: Development of a Novel Histone H1-Based Recombinant Fusion Peptide for Targeted Non-Viral Gene Delivery. *Int J Pharm.* 2013; 441: 307-15. **(IF: 3.64)**
23. Zarei H, Rezaee R. Behravan E, **Soltani F**, Mosaffa F, Iranshahi M, Behravan J.: Diversin, from *Ferula diversitata* protects human lymphocytes against oxidative stress induced by H₂O₂. *Nat Prod Res.* 2013; 27:1016-9. **(IF: 1.82)**
24. Skwarczynski M, Parhiz B.H , **Soltani F**, Srinivasan S, Kamaruzaman K.H, Lin I-C, Toth I.: Lipid Peptide Core Nanoparticles as Multivalent Vaccine Candidates against *Streptococcus pyogenes*. *Aus J Chem.* 2011; 65: 35-9. **(IF: 1.32)**
25. **Soltani F**, Mosaffa F, Iranshahi M, Karimi G, Malekaneh M, Haghghi F, Behravan J.: Auraptene from *Ferula szowitsiana* protects human peripheral lymphocytes against oxidative stress. *Phytother Res.* 2010; 24:85-9. **(IF: 3)**
26. Noroozi S, Mosaffa F, **Soltani F**, Iranshahi M, Karimi G, Malekaneh M, and Haghghi F, Behravan J: Antigenotoxic effects of the disulfide compound persicasulfide A (PSA) on rat lymphocytes exposed to oxidative stress. *Planta Med.* 2009; 75: 32-6. **(IF: 2.34)**
27. **Soltani F**, Mosaffa F, Iranshahi M, Karimi G, Malekaneh M, Haghghi F, Behravan J.: Evaluation of antigenotoxicity effects of umbelliprenin on human peripheral lymphocytes exposed to oxidative stress. *Cell Biol Toxicol.* 2009; 25: 291-6. **(IF: 2.33)**
28. Foroumadi A, Pournourmohammadi S, **Soltani F**, Asgharian-Rezaee M, Dabiri S, Kharazmi A, Shafiee A.: Synthesis and in vitro leishmanicidal activity of 2-(5-nitro-2-furyl) and 2-(5nitro-2thienyl)-5-substituted-1,3,4-thiadiazoles. *Bioorg Med Chem Lett.* 2005; 15:1983-5. **(IF: 2.45)**
29. Foroumadi A, **Soltani F**, Moallemzadeh-Haghghi H, Shafiee A. Synthesis, in vitro antimycobacterial activity and cytotoxicity of some alkyl alpha-(5-aryl-1, 3, 4thiadiazole-2ylthio)acetates. *Arch Pharm (Weinheim).* 2005; 338:112-6. **(IF: 2.28)**
30. Foroumadi A, **Soltani F**, Jabini R, Moshafi MH, Rasnani FM: Antituberculosis agents X. Synthesis and evaluation of in vitro antituberculosis activity of 2-(5-nitro-2-furyl)- and 2-(1-methyl-5-nitro-1Himidazol-2-yl)-1,3,4-thiadiazole derivatives. *Arch Pharm Res.* 2004; 27: 502-6. **(IF: 2.33)**
31. Foroumadi A, **Soltani F**, Rezaee MA, Moshafi MH: Synthesis and evaluation of in vitro antimycobacterial activity of some 5-(5-nitro-2-thienyl)-2-(piperazinyl, piperidinyl and morpholinyl)-1, 3, 4-thiadiazole derivatives. *Boll Chim Farm.* 2003; 142: 416-9.
32. Foroumadi A, **Soltani F**.: Antituberculosis agents. IX. In vitro antimycobacterial activity of N-(2phenyl-2-oxoethyl) and N-[2-(4-fluorophenyl)-2-oxoethyl] ciprofloxacin derivatives against some drug-resistant strains of *Mycobacterium tuberculosis* and *Mycobacterium avium* isolates. *Boll Chim Farm.* 2003; 142: 248-50.

33. Foroumadi A, Kiani Z, *Soltani F*: Antituberculosis agents VIII. Synthesis and in vitro antimycobacterial activity of alkyl alpha-[5-(5-nitro-2-thienyl)-1, 3, 4-thiadiazole-2-ylthio] acetates. *Farmaco*. 2003; 58:1073-6.
34. Foroumadi A, *Soltani F*, Moshafi MH, Ashraf-Askari R.: Synthesis and in vitro antibacterial activity of some N-(5-aryl-1, 3, 4-thiadiazole-2-yl) piperazinyl quinolone derivatives. *Farmaco*. 2003; 58:1023-8.
35. Foroumadi A, *Soltani F*, Asadipour A: Antituberculosis agents. VII. Synthesis and in vitro evaluation of antimycobacterial activity and cytotoxicity of some N-piperazinyl quinolone derivatives. *Boll Chim Farm*. 2003; 142: 130-4.
36. Foroumadi A, *Soltani F*, Mirzaei M.: Antituberculosis agents IV: in vitro antimycobacterial activity and cytotoxicity of N-piperazinyl quinolone derivatives containing 2-thienyl and 2-furyl moiety. *Pharmazie*. 2003; 58: 347-8. (IF: 1.99)
37. Foroumadi A, *Soltani F*, Moshafi MH.: Antituberculosis agents. VI. Activity of a new ciprofloxacin derivative against *Mycobacterium avium* and some drug-resistant strains of *Mycobacterium tuberculosis*. *Boll Chim Farm*. 2002; 141: 394-6.
38. Foroumadi A, *Soltani F*, Emami S, Davood A: Antituberculosis agents. III. In vitro evaluation of antimycobacterial activity and cytotoxicity of some N-piperazinyl quinolone derivatives. *Boll Chim Farm*. 2002; 141: 247-9.

Books:

Hashemi M, Ramezani M, *Soltani F*, Mokhtarzadeh A, Jaafari MR, Parhiz H, Production and evaluation of peptide and protein preparations, Mashhad University of Medical Science, 2015

Work Shops

- SmartChip Real-Time PCR system, Takara Bio Europe, Brussels, Belgium
- High throughput screening in Drug Discovery, Bruker, Brussels, Belgium
- Stem cell, miRNA and Tissue engineering, Stem cell technology research center, Tehran, Iran
- Animal welfare workshop, University of Queensland, Brisbane, Australia.
- Phage Display, Avesina research center, Shahid Beheshti University of Medical Sciences, Tehran, Iran
- Planta Medica, Medical sciences research center, University of medical sciences, Kerman, Iran
- Research methods, Medical sciences research center, University of medical sciences, Kerman, Iran

Teaching Experiences

□ Animal cell culture¹, Biological products¹, Industrial pharmaceuticals¹, Formulation of protein products¹, Quality control of biopharmaceuticals¹, English manuscript writing², Medicinal chemistry³

¹Mashhad University of Medical Sciences; ²Sabzevar University of medical Sciences, ³Kerman University of Medical Sciences

Scientific Presentations

- Biosimilars (2018). Sanofi Company, Mashhad, Iran
- Biosafety (2018). Ethic in research summer school, Mashhad, Iran
- Design, synthesis and evaluation of liposome-like vesicles as gene delivery carrier (2018). SLAS Europe 2018, Brussels, Belgium
- Cloning, expression and purification of a fusion peptide composed of two repeating units of histone H1, a pH-dependent fusogenic peptide and a Her-2 targeting ligand as siRNA delivery vector (2014). The 1st Middle East & the 6th Iranian Controlled Release Conference. Tehran, Iran

- Design and Development of a Series of Recombinant Fusion Vectors for Targeted Gene delivery (2012).The 13th Iranian Pharmaceutical Sciences Congress, Isfahan, Iran
- Cloning, expression and characterization of a fusion peptide composed of two repeating units of histone H1 and Her-2 ligand as a gene delivery vector (2011). PhD student's research festival. Mashhad, Iran
- Biosynthesis and characterization of a nanoparticle gene delivery system composed of two repeating units of histone H1 and a breast cancer specific targeting peptide (2011). International Control release congress. Mashhad, Iran
- Biotechnology and its applications, pharmacy's retraining course, Mashhad, Iran
- Evaluation of antigenotoxicity effects of umbeliprenin on human peripheral lymphocytes exposed to oxidative stress (2009) Buali research center conference. Mashhad, Iran
- Evaluation of antigenotoxicity effects of auraptene on human peripheral lymphocytes exposed to oxidative stress (2008) The 11th Iranian Pharmaceutical Sciences Conference, Kerman, Iran
- Synthesis of new N-methyl-D-aspartate (NMDA) antagonists as neuroprotectant agents in CNS (2001) The 6th seminar of Iranian pharmacy university , Isfahan ,Iran