

Curriculum Vitae (2020)

Mahnaz Hadizaeh

Associate Professor

Department of Biotechnology, Iranian Research Organization for Science & Technology

Address: Iranian Research Organization for Science & Technology (IROST), Tehran, Iran. P.O.Box: 33535-111

Tel: +98-21-56276637 (Work)

Fax: +98-21-56276637

Mobile: 0098-9125236745

E-mail: hadizadehmahnaz@gmail.com

Education:

- 1- B.Sc. in Biology, 1995, Shahid Beheshti University, Tehran, Iran.
- 2- M.Sc. in Biochemistry, 2004, Tehran University, Tehran, Iran.
- 3- PhD in Biochemistry, 2010, Tehran University, Tehran, Iran.

Experience:

1. 1989-1391 Academic staff, Academic Center for Education, Culture & Research (ACECR), Tehran, Iran.
2. 1391-present Academic staff, Department of Chemical Technologies, Iranian Research Organization for Science & Technology (IROST), Tehran, Iran.

Awards and Honors:

- 1- Outstanding student in PhD, M.Sc. and B.Sc.
- 2- Alumni award for ranked 1st PhD in Biochemistry, 2010, Tehran University, Iran

Research interests:

- ✓ Photodynamic therapy
- ✓ Nanotechnology (Nano drug delivery)
- ✓ Biochemical Mechanisms of Cancer
- ✓ Enzymology
- ✓ Medicinal Plants

Publications:

1. Mahboobeh Akbarizare, Hamideh Ofoghi, **Mahnaz Hadizadeh**, Nasrin Moazami. In vitro assessment of the cytotoxic effects of secondary metabolites from *Spirulina platensis* on hepatocellular carcinoma. 2020: Egyptian Liver Journal 10(1):11.
2. Mahboobeh Akbarizare, Hamideh Ofoghi, **Mahnaz Hadizadeh**. In vitro Anticancer Evaluation of Saponins Obtained From *Spirulina platensis* on MDA, HepG2, and MCF7 Cell Lines. Multidiscip Cancer Investig. 2019; 3 (4):25-32.

3. **Mahnaz Hadizadeh**, Hamideh Ofoghi, MehranKianirad, ZohrehAmidi. Elicitation of pharmaceutical alkaloids biosynthesis by salicylic acid in marine microalgae *Arthrospira platensis*. *Algal Research* 2019; 42: 101597.
4. Mirzaei M, Mirdamadi S, Safavi M, **Hadizadeh M**. In vitro and in silico studies of novel synthetic ACE-inhibitory peptides derived from *Saccharomyces cerevisiae* protein hydrolysate *Bioorg Chem.* 2019; 87:647-654. doi: 10.1016/j.bioorg.2019.03.057.
5. Mirzaei M, Mirdamadi S, Safavi M, Zare D, **Hadizadeh M**, Asadi MM. Synthesis, in vitro and cellular antioxidant activity evaluation of novel peptides derived from *Saccharomyces cerevisiae* protein hydrolysate: structure-function relationship: Antioxidant activity and synthetic peptides. *Amino Acids.* 2019; 51(8):1167-1175. doi: 10.1007/s00726-019-02752-z.
6. Simin Belali, Ali Reza Karimi, **Mahnaz Hadizadeh**. Cell-specific and pH-sensitive nanostructure hydrogel based on chitosan as a photosensitizer carrier for selective photodynamic therapy. *International Journal of Biological Macromolecules* 2018; 110:437-448.
7. Asma Toraji, **Mahnaz Hadizadeh***, Fahimeh Nematı Mansoor. The Effect of Nanoformulation of Amoxicillin on its Antibacterial Activity against Common Bacterial Strains Involved in Hospital-Acquired Infections. *AMUJ* 2018; 21(130): 11-20.
8. Azizvakili F, Saadatnia G, **Hadizadeh M**. Investigating the Relationship Between Human Papillomavirus and Herpes Simplex Virus Type 1 and 2 with Endometriosis Lesions. *Journal of Fasa University of Medical Sciences* 2018; 7; 4-10.
9. **Mahnaz Hadizadeh**, Asma Toraji. Amoxicillin-Loaded Polymeric Nanoparticles of Less than 100 nm:Design, Preparation and Antimicrobial Activity Against MethicillinResistant *Staphylococcus aureus*. *Iran J Sci Technol Trans Sci* 2017; 1-8. DOI 10.1007/s40995-017-0346-2.
10. Ali Reza Karimi, Azam khodadadi, **Mahnaz Hadizadeh**. A nanoporous photosensitizing hydrogel based on chitosan cross-linked by zinc phthalocyanine: An injectable and pH-stimuli responsive system for effective cancer therapy. *RSC Advances* 2017; 6(94):91445-91452.
11. Simin Belali, Ali Reza Karimi, **Mahnaz Hadizadeh**. Novel nanostructured smart, photodynamic hydrogels based on poly(N-isopropylacrylamide) bearing porphyrin units in their crosslink chains: A potential sensitizer system in cancer therapy. *Polymer* 2017; 109: 93-105.
12. Zahra Zahed, **Mahnaz Haduzadeh***. Comparison of antibacterial property of chitosan nanoparticles against *Escherichia coli* and *Staphylococcus aureus*. *JQUMS* 2016;19: 21-28.
13. S. Samavati, **M. Hadizadeh***, M. Abedi, M. Kiani Rad. Cytotoxic effects of different solvents and essential oil of eucalyptus on human fibroblast cells. *JQUMS* 2015,19; 4-9.
14. Tabbodi M, **Hadizadeh M***, Jahanshiri- Moghadam M. Evaluation of Two Different Light Sources on the Efficiency of Photodynamic Therapy of Breast Cancer:An in vitro Study. *J Zanzan Univ Med Sci.* 2015; 23: 1-12.
15. Hamidreza Mirzaei, Gholamreza Esmaeeli Djauid, **Mahnaz Hadizadeh***, Maryam Jahanshiri-MoghadamThe efficacy of Radachlorin-mediated photodynamic therapy in human hepatocellular carcinoma cells. *Journal of Photochemistry and Photobiology B: Biology* 142 (2015) 86–91.
16. **Mahnaz Hadizadeh**, Mohsen Fateh. Synergistic cytotoxic effect of gold nanoparticles and 5-aminolevulinic acid-mediated photodynamic therapy against skin cancer cells. *Iranian journal medical sciences.* 2014 Sep;39(5):452-8.**Mahnaz Hadizadeh**, Ezzatollah Keyhani, Jacqueline Keyhani and Cyrus Khodadadi. (2009) Functional and structural alterations induced by copper in xanthine oxidase. *Acta biochimica et biophysica Sinica.* 41(7): 603-617.
17. **M Hadizadeh**, C Khodadadi, E Keyhani. (2008) Kinetics and spectrophotometric studies of the effect of copper on xanthine oxidase. *FEBS J.* 275:219.

18. **Mahnaz Hadizadeh** and Ezzatollah Keyhani. (2007) Toxic Effect of Cadmium on Catalase Activity in *Crocus sativus* L. corm. *Acta Horticulturae*. 739: 443-449.
19. Jacqueline Keyhani, Ezzatollah Keyhani, Farnoosh Attar and **Mahnaz Hadizadeh**. Anti-oxidative stress enzymes in *Pleurotus ostreatus*. (2007) *Current Research Topics in Applied Microbiology and Microbial Biotechnology*. 3-7.
20. Ezzatollah Keyhani, Lila Ghamsari, Jacqueline Keyhani, **Mahnaz Hadizadeh**. (2006) Antioxidant enzymes during hypoxia-anoxia signaling events in *Crocus sativus* L. corm. *Annals of the New York Academy of Sciences*. 1091: 65–75.
21. **Mahnaz Hadizadeh** and Ezzatollah Keyhani. (2004) Detection and kinetic properties of alcohol dehydrogenase in dormant corms of *Crocus sativus* L. *Acta Horticulturae*. 650:127-139.
22. Ezzatollah Keyhani, Jacqueline Keyhani, **Mahnaz Hadizadeh**, Lila Ghamsari, and Farnoosh Attar. (2004) Cultivation techniques, morphology and enzymatic properties of *Crocus sativus* L. *Acta Horticulturae*. 650: 227-246.

1. محبوبه اکبری زارع، حمیده افقی، مهناز هادی زاده. ارزیابی ترکیبات فنلی ریزجلبک اسپیرولینا پلاتنسیس با دو روش TLC و HPLC. مجله زیست شناسی دریا. پاییز 1398 جلد 11 شماره 3 صفحات 13-24
2. محبوبه اکبری زارع، مهناز هادی زاده، حمیده افقی. مقایسه حساسیت روش‌های مختلف بروموکروزول گرین، تیتراسیون معکوس، واگنر و مایر برای ردیابی آلکالوئید در اسپیرولینا پلاتنسیس. مجله زیست شناسی دریا. زمستان 1397. دوره 10، شماره 4، صفحه 1-14.

Congress:

1. Fatemeh Teimourpour, **Mahnaz Hadizadeh**, Hanieh Jafary. Induction and inhibition of catalase activity by spirulina, an edible cyanobacterium. The 15th Iranian national congress of biochemistry & 6th international congress of biochemistry & molecular biology. 25-28 August 2018. Isfahan-Iran.
2. Zahra Zahedi Yeganeh, **Mahnaz Hadizadeh***, Mohsen Vaez. In vitro activity of tetracycline plus chitosan nanoparticle against *Staphylococcus aureus*. The 1th national & 9th international Biotechnology Congress of Biology. 24-26 May 2015.
3. Zahra Zahedi Yeganeh, **Mahnaz Hadizadeh***. Study on effect of pH on the size of chitosan nanoparticles. The 1th national & 9th international Biotechnology Congress of Biology. 24-26 May 2015.
4. Azar Javidmehr, Mehran. Kiani Rad, Hamideh Ofoghi, **Mahnaz Hadizadeh***. Synthesis of polylactic-co-glycolic acid nanoparticles as plasmid DNA carrier. The 1th national & 9th international Biotechnology Congress of Biology. 24-26 May 2015.
5. Aleme Mirzaee, Mehran. Kiani Rad, Davood Zare, Malihe Safavi, **Mahnaz Hadizadeh***. Extraction of curcuminoid from turmeric by ethanol using boiling mechanism. The 4th national Congress on Medical Plants. 12-13 May 2015. Tehran-Iran.
6. Morvarid Tabbodi, **Mahnaz Hadizadeh***. Synthesis of 5-aminolevulinic acid-loaded chitosan nanoparticles for photodynamic therapy. The National Congress on Nanomedicine in diagnosis and treatment of hard to treat diseases. 18-19 February 2015. Tehran-Iran.
7. Sabereh Samavati, **Mahnaz Hadizadeh***, Mohammad Abedi, Mehran Kiani Rad, Morteza Rabiei. Encapsulation of eucalyptus essential oil in chitosan nanoparticles for delivery to cancer cells. The

National Congress on Nanomedicine in diagnosis and treatment of hard to treat diseases. 18-19 February 2015. Tehran-Iran.

8. N. Bakhtiari, K. Hoseini pajouh, **M. Hadizadeh**. Investigate the effect of antisense RNA on two prostate cancer cell lines. The 8th national & 5th international Conference of Biology. 4-6 September 2013.
9. **M. Hadizadeh**, G. Esmaeeli Javid. Determine the efficiency of PDT in the treatment of Hepatocellular carcinoma. The 17th national & 5th International Conference of Biology. 4-6 September 2012.
10. **M. Hadizadeh**, M. Seifipour. Evaluation the thermal stability of alcohol dehydrogenase from *Crocus sativus* L. The 17th national & 5th International Conference of Biology. 4-6 September 2012.
11. **M. Hadizadeh**. Optimizing photosensitizers for photodynamic therapy. Laser in Medicine National Congress. 16-18 Feb 2011. (Oral Presentation)
12. R. Rofougaran, **M. Hadizadeh**, M. Houshmand, O. Aryani. Screening of mitochondrial DNA depletion syndrome patients in Iran. 14 the International Symposium on Purine and Pyrimidine Metabolism in Man, PP11. 18-21 Feb 2011, Japan. (Poster Presentation)
13. **M. Hadizadeh**, E. Keyhani. Effect of Cu^{2+} on the thermal stability bovine milk xanthine oxidase. The 16th National & the 4th International Congress of Biology. Mashhad-Iran, September 2010. (Poster Presentation)
14. **M. Hadizadeh**, R Rofougran , M Houshmand , O Aryan. Biochemical diagnosis of the mitochondrial respiratory chain deficiencies in Iranian Patients. 4th Annual Iranian Neurogenetics Congress Advances In Neurogenetics, 24-26 November 2010. (Poster Presentation)
15. **M. Hadizadeh**, C. khodadadi, E. Keyhani and J, Keyhani. Kinetics and spectrophotometric studies of the effect of copper on xanthine oxidase. 33rd FEBS Congress & 11th IUBMB conference Biochemistry of cell regulation. Athens, Greece. 28 june-3 July 2008.
16. F. Attar, E. Keyhani, J. Keyhani and M. Hadizadeh. Transition metal-induced stimulation of lignin peroxidase activity in *Crocus sativus* L. corms. The 9th Iranian Congress of Biochemistry & the 2nd International Congress of Biochemistry and Molecular Biology. Shiraz-Iran, Oct. 29-Nov. 1, 2007. (Poster Presentation)
17. **M. Hadizadeh**, E. Keyhani, F. Attar and J, Keyhani. Superoxide dismutase activity in *Crocus sativus* L. corms exposed to cadmium. The 9th Iranian Congress of Biochemistry & the 2nd International Congress of Biochemistry and Molecular Biology. Shiraz-Iran, Oct. 29-Nov. 1, 2007. (Poster Presentation).
18. **M. Hadizadeh**. Kinetic properties of alcohol dehydrogenase in dormant corms of *Crocus sativus* L. corm. The first international symposium on saffron biology and biotechnology. Albacete, Spain, 22nd_25th October, 2003.

1. فروه السادات حسنی- **مهناز هادی زاده** - داود زارع- سعیده مزینانی. غلظت بهینه استیک اسید برای تهیه نانوذرات پلی ساکارییدی. کنفرانس بین المللی مطالعات میان رشته ای نانو. 16 اسفند 1398. تهران، ایران.

2. **مهناز هادی زاده** - سمانه ابراهیمی- فهیمه نعمتی منصور بررسی اثرات ضد میکروبی فلاونوئیدهای مستخرج از سیانوباکتری آرتروسپیرا بر علیه اشیشیا کلی ششمین کنگره ملی زیست شناسی و علوم طبیعی ایران 24 بهمن 1397، تهران، ایران

3. **مهناز هادی زاده** - حمیده افقی- فروه السادات حسنی- مهران کیانی راد. بررسی تاثیر الیسیاتور زیستی همی سلولز بر میزان بیومسو محتوای آکالوئیدی

ریزجلبک اسپیرولینا پلاتنسیس. ششمین کنگره ملی زیست شناسی و علوم طبیعی
ایران 24 بهمن 1397، تهران، ایران

Completed Projects

- 2009-2011 Synthesis of gold nanoparticles and their effects on the efficiency of photodynamic therapy for skin cancer.
- 2011-2012 Evaluation of Radachlorin-based- photodynamic therapy in the treatment Hepatocellular carcinoma.
- 2012-2013 Effect of light stimulation on the migration of stem cells derived from adipose tissue in the simulated electric field of open skin wounds in vitro.
- 2014-2016 Study of potency of primaquine loaded chitosan nanoparticles for the malaria treatment.
- 2016- 2017 Design and optimization of polymeric nanocarriers for intracellular delivery of beta- lactam antibiotics.
- 2017- 2019 Study of the influence of different biotic and abiotic elicitors on the production of alkaloids in microalgae Spirulina.

Projects in progress

2019- present Investigation of the effect of synthetic peptides to inhibit key glycolic enzymes of cancer cells.

Executive responsibilities:

- 1- Head of Cell culture Laboratory. 2011-2012.
- 2- Head of Bioenergy Research Group of at IROST, 2018-2020.
- 4- Head of Microbiology Laboratory. 2019-2020.

Scientific Adviser to:

- Biotechnology Scientific Group, Biotechnology Center, IROST. 2012- at present.
- Biotechnology Committee, Khawrazmi Scientific Award, IRAN. 2012-at present
- Biotechnology Committee, Young Khawrazmi Scientific Award, IRAN. 2012-at present

Courses Taught at Universities:

- General Biochemistry I & II (Undergraduate Courses).
- Enzymology in nanobiotechnology (M.Sc. Course).
- Nanomaterials: Introduction, Synthesis, Characterization and Applications (M.Sc. Course).
- Microbial Biotechnology(PhD Course)
- Applications Nanotechnology in medicine (M.SC. Course).
- General Biochemistry Lab. I & II (Undergraduate Courses).
- Eukaryotic cell(PhD Course)
- Structure and function of macromolecules (M.SC. Course).