

National Institute of Genetic Engineering & Biotechnology

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I. PERSONAL INFORMATION:

Name: Zarrin Minuchehr

Date of birth: 1966/11/05

Nationality: Iranian

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II. Education:

Institution & Location	Degree	Year	Field of Study
Tehran University	PhD	2003	Biophysics
Tehran University	M.Sc	1994	Biophysics
Isfahan University	B.Sc.	1989	Microbiology

III. PROFESSIONAL EXPERIENCE:

- Assistant Professor of the National Institute of Genetic Engineering & Biotechnology 2003 till now
- Editor of: Iranian Journal of Biotechnology, Journal of Science, Modern Genetics, Iranian Journal of Biology
- Bioinformatics different skills software and hardware oriented

IV. PROFESSIONAL MEMBERSHIPS

- Founder of the Bioinformatics Lab. in National Institute of Genetic Engineering & Biotechnology.
- Head of Nanotechnology Committee in National Institute of Genetic Engineering & Biotechnology.
- Founder of the Iran's Bioinformatics Society.
- Member of the Bioethics Committee.
- Member of the Bioinformatics Group University of Tehran.
- Member of the Biotechnology Society.
- Member of the Nanobiotechnology Committee of Iran.
- Member of Biophysical Society.
- Member of Biochemical Society.
- Member of New York Academy of Sciences.
- Member of International Hyperthermia Society.

V. AWARDS AND HONORS:

- The first Iranian woman to obtain a Ph.D. in Biophysics.
- Many grants and fellowships for attending different conferences along with the ISMB/ECCB Best Poster Award by the committee of international conference for intelligent systems for molecular biology and the European conference on computational biology 2004.

VI. SELECTED LECTURES:

- Organizer of 3rd Iranian Conference on Bioinformatics
- Organizer and lecturer in workshops in Bioinformatics (two international and 6 local workshops until now)
- One of the organizers and a member of the scientific committee in the first Bioinformatics Conference of Iran 2003.
- 2th International Training Course on Bioinformatics, Institute of Biochemistry and Biophysics, University of Tehran, Sep 2004, Tehran, Iran.
- Coordinator of the National BINASIA workshop, Nov. 2005, Tehran, Iran.
- DNA Cloning Workshop at National Institute of Genetic Engineering and Biotechnology (NIGEB), Tehran, Iran.
- Workshop of NMR, Tarbiat Modares University, Tehran, Iran.
- Workshop on Tissue and Cell Culture: University of Tehran, Tehran Iran.
- International Workshop on Microarray Data Analysis, Iran Bioinformatics Society, University of Tehran, May 2006, Tehran Iran.
- Application of Bioinformatics in Molecular Biotechnology, National Institute of Genetic Engineering and Biotechnology (NIGEB) and Institute for Research and Planning in Higher Education (IRPHE), Dec 2006 Tehran, Iran.
- Workshop on Expression, Production and Assay of Enzyme for Biotechnological Purposes, National Institute of Genetic Engineering and Biotechnology (NIGEB) and Institute for Research and Planning in Higher Education (IRPHE), Dec 2006 Tehran, Iran.

VII. TEACHING EXPERIENCE:

- Biophysics
- Cellular Biophysics
- Bioinformatics
- Protein Engineering
- Protein structure

VIII. RESEARCH INTERESTS:

International Projects:

- Propensity analysis for amino acids in loop regions connecting secondary structure in proteins.
- Sequence analysis of the exon intron database for DNA hopping.
- Automatic Propensity Calculation of Amino Acids In Different Groups of Protein.

National Projects:

- N-MYC sequence analysis (Comparative Modeling of N-MYC Structure)
- Building nanostructures from bottom up using protein and DNA and analyzing the related nucleotide sequences
- Analyzing different proteins used in nanobiotechnology
- Prediction of the secondary structure of Proteins using doublets overlapping information on known PDB structures.
- Doublets containing proline in α -Helices
- Teaching the Bioinformatics Skills in Iran
- A metabolomics, proteomics and Transcriptomics comparison of induced and constitutive recombinant protein production during high cell density cultivation Identification of Oil hydrocarbon degrading Enzymes from genome of *Alcanivorax borkumensis* using Bioinformatics and Molecular Biology Methods

X. PUBLICATIONS:

International Journals:

1. Asghari Alashti F., Minucmehr Z., *MiRNAs Which Target CD3 Subunits Could Be Potential Biomarkers for Cancers*. PLOS ONE, 2013, 8(11)
2. Mansouri S., Monajjemi M., Aghaee H., Zare K., **Minucmehr Z.**, *Molecular dynamic study of human prion protein upon D178N mutation: new perspective to H-bonds, salt bridges and the critical amino acids*. Protein and peptide letters, 2013, 20(7): p775-780.
3. Allahyari Fard N., **Minucmehr Z.**, Mousavi A., *Allergenicity Study of Genetically Modified Herbicide Resistant Crops (Bioinformatics Assessment)*, Bulletin of Environment, Pharmacology and Life Sciences, 2013, 2(3): p24-32.
4. Akbarzadeh-Sharbat S., Yakhchali B., **Minucmehr Z.**, Shokrgozar MA., Zeinali S., *In silico design, construction and cloning of Trastuzumab humanized monoclonal antibody: A possible biosimilar for Herceptin*, Advanced Biomedical Research, 2012. 1: p. 21.
5. Mohamadkhani A., Shahnazari P., **Minucmehr Z.**, Sobhani A.M., Tehrani M.J., Jazii F.R. and Poustchi H., *Protein-x of hepatitis B virus in interaction with CCAAT/enhancer-binding protein α (C/EBP α) - an in silico analysis approach* Theoretical Biology and Medical Modelling 2011. 8:41
6. **Minucmehr Z.**, Goliaei.B., *Propensity of amino acids in loop regions connecting beta-strands* Protein and Peptide Letters 2005. 12(4): p. 379-382.
7. Goliaei B., **Minucmehr.Z.**, *Exceptional pairs of amino acid neighbors in alpha-helices*. FEBS Letters, 2003. 537 : p. 121-127.
8. Goliaei B., **Minucmehr.Z.**, *Inhibition and recovery of GM-CSF production in the lung after hyperthermia*. Int. J. hyperthermia, 1999. 15(6): p. 541-547.

National Journals:

1. Allahyari Fard N., **Minucmehr Z.**, Mousavi A., *In silico Analysis for Allergenicity Assessment of Novel Proteins of Genetically Modified Organisms*, Genetics in the Third Millennium, 2013, 10(3): p2846-2855.
2. Akbarzadeh-Sharbat S., Yakhchali B., **Minucmehr Z.**, Shokrgozar MA., Zeinali S., *Expression Enhancement in Trastuzumab Therapeutic Monoclonal Antibody Production*

- using *Genomic Amplification with Methotrexate*. *Avicenna journal of medical biotechnology*, 2013, 5(2): p87-95.
- Farazmand A., Yakhchali B., Shariati P., **Minucmehr Z.**, Ofoghi H., *In silico genome-wide screening for TnrA-regulated genes of Bacillus clausii*, *Iranian Journal Of Biotechnology*, 2012. 10(1): p61-65.
 - Eskandari. V., Yakhchali. B., **Minucmehr Z.** , *In silico prediction of permissive sites of CstH subunit of E.coli CS3 pili for insertion of foreign peptides*, *Iranian Journal of Biology*, 2010. 23(1): p73-84.
 - Haji Mohammadi, **Minucmehr Z.**, Madadkar,S.A. ,*In silico assessment shows that Iranian Bt rice is not allergenic*. *Journal of Biosafety*, 2009. 1(2): p17-26.
 - Mahdevar. G., Rahimi. A., **Minucmehr Z.**, *Prediction of location and type of B-turns of a protein using self organizing neural network*, *Journal of Science (University of Tehran)*, 2008. 34(3): p55-59.
 - Soheili.Z. S., **Minucmehr.Z.**, Samiei.Sh., *Study the state of PI3K isoforms in human cancer prostate cells line*. *Feyz Journal*, 2007. Autumn(3) :p. 1-8.
 - Soheili Z., **Minucmehr.Z.**, *Molecular Motors*. *Modern Genetics*, 2005. Winter(1) : p. 25-29.
 - Soheili Z., **Minucmehr.Z.**, *Bioinformatics and the Genome Project*. *Sharg*, 2004(127): p. 15.
 - Minucmehr Z.**, Goliaei.B., *Protein databases*. *IJPT*, 2004. 3(1): p. 1-11.
 - Minucmehr Z.**, Goliaei.B., *High tendency for amino acid neighbors in alpha helices*. *Journal of the Iranian medical sciences*, 2003. Autumn (35): p. 469-475.
 - Minucmehr.Z.**, *Bioethics*. *News letter of the National Research Center for Genetic Engineering and Biotechnology*, 2003(61): p. 26-27.

International Congresses:

- Allahyari Fard N., **Minucmehr Z.**, Mousavi A., *The Role of Bioinformatics in Allergenicity Assessment of Recombinant Proteins*, 15thInternational Congress of Immunology. 2013. Milan, Italy.
- Allahyari Fard N., **Minucmehr Z.**, Mousavi A., *Comparison of Allergen Databases for In Silico Allergenicity Assessment*, International Work-Conference on Bioinformatics and Biomedical Engineering (IWBBIO). 2013. Granada, Spain.

3. Allahyari Fard N., **Minucmehr Z.**, Mousavi A., *In Silico Allergenicity Assessment of Novel Proteins Derived from GMHR Crops*, International Work-Conference on Bioinformatics and Biomedical Engineering (IWBBIO). 2013. Granada, Spain.
4. Allahyari Fard N., **Minucmehr Z.**, Mousavi A., *Bioinformatics Analysis for Allergenicity Assessment of Cry1Ab Proteins in Iranian Genetically Modified Rice*, 11th International Congress of Immunology & Allergy. 2012. Tehran, Iran.
5. Shamila D. Alipoor, **Zarrin Minucmehr**, Armin Madadkar-Sobhani, Mehran Miroliaei. *Analysis of Core structure in AlcoholDehydrogenases*. 52nd Annual Meeting of the Canadian Society for Biochemistry, Molecular and Cellular Biology Protein Folding: Principles and Diseases. 2009. Ontario, Canada.
6. Mostafa Afshari, **Zarrin Minucmehr**, Armin Madadkar Sobhani, Ali Hagh Nazari, Ahmad Parsian and Bahram Goliaei. *Comparison for the Three Protein Representative Selection Methods: PDB-REPRDB, ASTRAL and PISCES*, 16th Annual International Conference on Intelligent Systems for Molecular Biology. 2008. Toronto, Canada.
7. **Minucmehr.Z.**, Farzami.B., Sobhani.A.M, Jahanshahi.M and Goliaei.B. *A genome wide analysis of guanines defining the best sequence for DNA hopping in Nanotechnology and its applications*. 2007. Sharjah, United Arab Emirates.
8. Jahanshahi M., Sanati.M.H., **Minucmehr.Z.**, Hajizadeh S., Babaei Z. *Controlled fabrication of gelatin nanoparticles as drug carriers*. in *Nanotechnology and its applications*. 2007. Sharjah, United Arab Emirates. full paper, page 228-232
9. **Minucmehr.Z.**, Goliaei.B. *Four helix design using amino acid doublets the 3-rd Moscow conference on computational molecular biology*. in *the 3-rd Moscow conference on computational molecular biology*. 2007. Moscow, Russia.
10. Shamsavandi.S., **Minucmehr.Z.**, Ebrahimi.M.M., Ghorashi.S.A., *The genome sequence analysis of H5N1 influenza virus isolated from swan outbreak in Iran*, in *15th World Veterinary Poultry Congress*. 2007: Beijing China.
11. **Minucmehr.Z.**, Eefani.M., Fatollahi Rad.S., Mahdavi.T., Sadat sabet.F., Taghi.A., Goliaei.B. *Global propensity of amino acids in prion proteins*. in *12th International Congress on Intelligent Systems for Molecular Biology & 3th European Conference on Computational Biology*. 2004. Scottish Exhibition & Conference Center, Glasgow, Scotland, UK.
12. **Minucmehr.Z.**, Goliaei.B. *Entropy in loop regions connecting beta structures*. in *IPG'04 Integrative Post genomic a multidisiplinary approach to living systems*. 2004. Lyon, France

13. **Minucheher.Z.**, Rahmandad.T., Minucheher.S. and Goliaei.B. *Propensity of amino acids in loop regions connecting beta strands in 4th European biophysics congress.* 2003. Alicante, Spain.
14. Goliaei.B., **Minucheher.Z.** *Relative Entropy: A more Accurate Measurement Compared to the Propensity Calculation for Amino Acids in Different Helical Positions.* in *Molecular And Cellular Proteomics, HUPO 2nd Annual and IUBMB XIX World Congress.* 2003. Montreal, Canada.
15. **Minucheher.Z.**, Goliaei.B. *Hinderance in amino acid neighboring in helical structures.* in *46th Biophysical society Annual Meeting* 2002. San Francisco, California.
16. Kazemzadeh.M., Rahmandad.T., **Minucheher.Z.** *X-Pro and Pro-X Amino Acids Energy Calculation in different Helical Positions of a 14 Residue Poly Ala Helix.* in *Exploring Modern Computaional Chemistry EMC2.* 2002. University of Nottingham, UK.
17. **Minucheher.Z.**, Goliaei.B. *Acid Propensity for short Loop Regions in Helix-Loop-Helix Structures* in *Biomics, Gene to Protien to structure to drug.* 2001. Congress Centre Messe Frankfurt, Germany.
18. **Minucheher.Z.**, Goliaei.B. *Local Propensity for different locations of an α -helix* in *18th International Congress of Biochemistry and Molecular Biology.* 2000. Birmingham, UK.
19. **Minucheher.Z.**, Goliaei.B. *The Relative Preference value for the two ends of alpha helices using a window of two amino acids.* in *6th International Symposium Protein Structure Function Relationship.* 1999. Research Institute of Chemistry University of Karachi, Pakistan.
20. Goliaei.B., **Minucheher.Z.** *Kinetics of a novel damage and repair process in colony-stimulating factor production by the lung invoked by invivo administration of hyperthermia.* in *Experimental Hematology.* 1997.

National Congresses:

1. Allahyari Fard N., **Minucheher Z.**, *In silico Analysis for Allergenicity Assessment of Novel Proteins of GMOs.* First National Conference on Computational Science. 2012. Damghan. Iran.
2. Allahyari Fard N., **Minucheher Z.**, Mousavi A., *In silico Analysis for Allergenicity Assessment of Mutated epsps Proteins in Canola Resistant Against Glyphosate.* 17th National & 5th International Iranian Biology Conference. 2012. Kerman. Iran.
3. Akbarzadeh Sharbaf S., Yakhchali B., Minucheher Z., Shokrgozar M. A., Zeinali S. *Practical Guidelines on Increasing the Gene Copy Number and Obtain Producer Stable*

- Cell Lines in Trastuzumab Therapeutic Monoclonal Antibody Production*. 7th National Biotechnology Congress of Iran. 2011. Tehran, Iran.
4. Akbarzadeh Sharbaf S., Yakhchali B., Minucmehr Z., Shokrgozar M. A., Zeinali S. *The Expression Level of HER2 Receptor in Breast Tumor Cells* . 7th National Biotechnology Congress of Iran. 2011. Tehran, Iran.
 5. Rahimi R., Mahdevar Gh., **Minucmehr Z.**, Madadkar-Sobhani A. *Selection of Appropriate Scoring Matrix for Finding Templates in Homology Modeling*. 3rd Iranian Conference on Bioinformatics. 2010. Tehran, Iran
 6. Ahangari Cohan R. , Madadkar-Sobhani A. , Norouzian D. , Khanahmad H. , Roohvand F. , Aghasadeghi M. R. , **Minucmehr Z.** *Rational Site Selection for Cysteine Specific PEGylation Using Bioinformatics: Erythropoietin as a Case Study*. 3rd Iranian Conference on Bioinformatics. 2010. Tehran, Iran
 7. Taghizadeh M. , **Minucmehr Z.** , Madadkar-Sobhani A. , Goliaei B. *Creating an Exact Model of 3D Protein Structure for in Silico Site Directed Mutation*. 3rd Iranian Conference on Bioinformatics. 2010. Tehran, Iran
 8. Kheitan S. , **Minucmehr Z.** , Madadkar-Sobhani A. , Darvishalipour S., Steipe B. *Pattern Matching of Dynein Heavy Chain Family*. 3rd Iranian Conference on Bioinformatics. 2010. Tehran, Iran
 9. Farazmand A. , Yakhchali B. , **Minucmehr Z.** , Shariati P. *Genome-Wide Screening for TnrA Regulated Genes of Bacillus Clausii Associated with a TnrA Box*. 3rd Iranian Conference on Bioinformatics. 2010. Tehran, Iran
 10. Nouri A., **Minucmehr Z.**, Madadkar-Sobhani A., Bambaie B. *Alcanivorax Borkumensis Whole Genome Analysis for P450 Like Proteins*. 3rd Iranian Conference on Bioinformatics. 2010. Tehran, Iran
 11. Akbarzadeh Sharbaf S., Zeinali S., **Minucmehr Z.**, Shokrgozar M A, Yakhchali B. *Structural Studies of Therapeutic Monoclonal Antibodies Using IMGT/3D Structure; Tools and Database*. 3rd Iranian Conference on Bioinformatics. 2010. Tehran, Iran
 12. Afzalifar R, Madadkar-Sobhani A., **Minucmehr Z**, Goliaei B. *TITAN Protein Secondary Structure Assignment by Emphasis on Tight Turns*. 3rd Iranian Conference on Bioinformatics. 2010. Tehran, Iran

13. Lashkarian H. E., Raheb J, Shahzamani K, **Minucmehr Z.** , Bardania H. *Cholesterol Oxidase Gene Analysis Derived from a Native Rhodococcus sp. Strain 501.* 3rd Iranian Conference on Bioinformatics. 2010. Tehran, Iran
14. Ghanbari L., Didehvar F., **Minucmehr Z.**, Madadkar-Sobhani A. *Elongation Vecotr as a Parameter to determine the hydrophobicity degree of proteins.* 6th National Biotechnology Congress of Iran. 2009. Tehran. Iran.
15. Foroughmand Arabi M. H., **Minucmehr Z.**, Goliaei B. *Which characteristic forces a protein to choose the folded shape?* 2nd Iranian Conference on Bioinformatics. 2008. Tehran, Iran
16. Sarial. S., **Minucmehr. Z.**, Kheitan. S. *A Bioinformatics Study on Brca2 Protein; Trying to Find a Relation between Gene Mutation and the Mo.* 2nd International Student Conference of Biotechnology. 2008. Tehran. Iran.
17. **Minucmehr.Z.**, Farzami.B., Sobhani.A.M., Jahanshahi.M., Goliaei.B. *DNA as a Nano Electronic Device.* in *First Nano Technology in Environments.* 2007. Isfahan Iran, full paper, page 1051-1057
18. Shahsavandi S., **Minucmehr.Z.**, Ebrahimi M.M. *Molecular characterization of H5N1 influenza virus isolated from Iran.* in *Fourth Iranian Congress of Virology.* 2007. Pasteur Institute of Iran, Tehran, Iran.
19. Latifi-Navid S., **Minucmehr.Z.**, Ghoreishi S.A. *In silico characterization and modeling of Helicobacter Pylori FtsZ: A potential therapeutic target.* in *7th Helicobacter Pylori Seminar.* . 2007. Tehran, Iran.
20. Shahnazari.P., Ahmadian.G., **Minucmehr.Z.**, Sobhani A.M., Parivar.K., Ghandili.S., Khaytan.S. *Characterization of a novel chitinase from B.Pumilus(Chis) using bioinformatics methods.* in *9th Iranian Congress of Biochemistry & the 2th International Congress of Biochemistry and Molecular Biology.* 2007. Shiraz, Iran.
21. Hamid M., **Minucmehr.Z.**, Akbari M.T. *Phylogenetic and migration analysis of Iranian populations based on the Connexin-26 mutations.* in *9th Iranian Congress of Biochemistry & the 2th International Congress of Biochemistry and Molecular Biology.* 2007. Shiraz, Iran.
22. Ghamkhar M., Goliaei.B., **Minucmehr Z.** *Relative entropy calculation for different positions of amino acid in beta strands.* in *9th Iranian Congress of Biochemistry & the 2th International Congress of Biochemistry and Molecular Biology.* 2007. Shiraz, Iran.

23. Khaytan S., **Minucmehr.Z.**, Sobhani A.M., Darvishalipur S., Sanaty M.H., Jahanshahi M. *Phylogenetic analysis of dynein heavy chains on the basis of motor domain in mammals.* in *5th National Biotechnology Congress of Iran.* 2007. meeting conference hall, Tehran, Iran, full paper
24. Hajimohammadi H., **Minucmehr.Z.**, Sobhani A.M., Taeb M., Goliaei B. *Bioinformatic analysis of cry toxin sequences which known in 2006 in order to study safety and potential cross reactivity for human.* in *5th National Biotechnology Congress of Iran.* 2007. Summit meeting conference hall, Tehran, Iran, full paper
25. Babaei.Z., Jahanshahi.M., Sanati M.H., **Minucmehr.Z.** *Fabrication and optimization of Gelatin nanoparticles for delivering of anti-cancer drug* in *5th National Biotechnology Congress of Iran.* 2007. Summit meeting conference hall, Tehran, Iran, full paper
26. Valaee S., **Minucmehr.Z.**, Shojaei M., Sobhani A.M., Shahnazari P., Khaytan S. *CPG island methylation ananalysis of N-MYC in Neuroblastoma* in *1th International congress on Health Genomics and Biotechnology.* 2007. Summit meeting conference hall, Tehran, Iran.
27. Darvishalipoor S., **Minucmehr Z.**, Miroliaei M., Sobhani A.M. *Molecular phylogeny of alcohol dehydrogenase gene and protein in fungi* in *1th International congress on Health Genomics and Biotechnology.* 2007. Summit meeting conference hall, Tehran, Iran.
28. Hajimohammadi.H., **Minucmehr.Z.**, Sobhani.A.M., Taeb M., Goliaei B. *In silico analysis of amino acids tendency in food plant allergenes.* in *1th International congress on Health Genomics and Biotechnology.* 2007. Summit meeting conference hall, Tehran, Iran.
29. Goliaei B., **Minucmehr.Z.**, Nikbakht H., Goudarzi M. *Sequence analysis of the secondary structures of proteins.* in *8th Iranian Congress of Biochemistry.* 2005.
30. Ghamkhar M., **Minucmehr.Z.**, Goliaei B. *Propensity calculation for amino acids in different positiions in beta strands.* in *8th Iranian Congress of Biochemistry.* 2005.
31. Nikbakht H., **Minucmehr.Z.**, Sobhani A.M., Goliaei B. *Developing a software for isolating sequences with Helix secondary structure using DSSP.* in *Firs Iranian bioinformatics Conference Institute of Biochemsitry and Biophysics.* 2003: University of Tehran, Iran.
32. **Minucmehr Z.**, Goliaei B. *Comparison between local propensity of positions in alpha helices calculated via doublet and singlet frequencies of amino acids.* in *First Iranian Congress of Biochemistry and Biophysics* 2000. University of Tehran, Iran.

33. **Minuchehr Z.**, Goliaei.B., .Khajeh.Kh. *Binary amino acid preference in alpha helices.* in *14th Iranian Congress of Physiology and Pharmacology* 1999. Tehran University of Medical Sciences.
34. Goliaei B., **Minuchehr.Z.**, Ahmadian S., Ghadam.P., Jaafari.M. *Amino acid preference in alpha helices.* . in *The Fourth Biochemsitry Congress Iran.* 1997. Babol University of Medical Sciences.