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Career:

2000-2006: Research assistant, Plant Biotechnology Dept. National Institute for Genetic engineering and Biotechnology, Tehran, Iran.

2015-present: Researcher (assistant professor) in ABRII, Karaj, Iran.

Education:

Ph. D, 2006-2012, Plant Biotechnology Department, National Institute of Genetic Engineering and Biotechnology, Tehran, Iran.

Thesis title: Functional Analysis of *PAP9* and *PAP18* Genes Encoding Purple Acid phosphatases in *Arabidopsis thaliana*.

M. Sc., 1997-2000, Biology Department, Faculty of Science, Tehran Tarbiat Moallem University, Tehran, Iran.

Thesis title: Application of genetic engineering methods for obtaining salt tolerant phenotype in *Arabidopsis thaliana*.

B. Sc. 1992 -1996, Biology Department, Faculty of Science, Tehran University, Tehran, Iran

Teaching Experience:

Supervisor, Ph.D. Thesis, Zahra Fathi, NIGEB, Since 2020.

Supervisor, M.Sc. Thesis, Niloufar Peykari, Shahed University, 2017-2020.

Advisor, Ph.D. Thesis, Golnoush Taghiabadi, Aazd University, Since 2022

Advisor, Ph.D. Thesis, Nasibe Chenarani, Zabol University, 2018-2022.

Advisor, Ph.D. Thesis, Sahar Dashchi, Razi University, 2018-2021.

Workshop lab instructor, Application of genome project data in Biotechnology, 2007, National Institute of Genetic Engineering and Biotechnology (NIGEB), Tehran, Iran.

Workshop lab instructor, Bioinformatics Applications in Molecular Biology, 2006, National Institute of Genetic Engineering and Biotechnology (NIGEB), Tehran, Iran.

Workshop lab instructor, Potato Transformation, 2002, National Institute of Genetic Engineering and Biotechnology (NIGEB), Tehran, Iran.

Workshop lab instructor, Gene Transfer and Expression in Tobacco, 2002, National Institute of Genetic Engineering and Biotechnology (NIGEB), Tehran, Iran.

Workshop lab instructor, Gene Transfer and Expression in Plant, 25 Feb-2 Mar, 2001, National Institute of Genetic Engineering and Biotechnology (NIGEB), Tehran, Iran.

Workshop lecturer and lab instructor, Recombinant DNA, 2000, Agricultural Biotechnology Research Institute, Karaj, Iran.

Current projects and subprojects:

-Development of male sterile and restorer lines for hybrid seed production.

1. Development of a male sterile line for F1 hybrid seed production in *Brassica napus* using transformation of the mitochondrial gene responsible for male sterility. Supported by ABRIL.
2. Development of a restorer line for F1 hybrid seed production in *Brassica napus* using transformation of the nuclear restorer gene. Supported by ABRIL.

- Development of transgenic plants tolerant to glyphosate herbicide in canola (*Brassica napus*)

3. Expression of a plant edited EPSPS gene to confer tolerance to glyphosate in canola. Supported by ABRIL.
4. Development of homozygous transgenic canola (*Brassica napus*) plants with glyphosate resistance and their molecular confirmation. Supported by ABRIL.

- Introducing transgenic *Brassica napus* with increased phosphate uptake competence and tolerance to herbicide. Supported by ABRIL & NIGEB

- Optimizing regeneration of Chickpea (*Cicer arietinum*) and cloning the EPSPS gene and ubiquitin promoter from Chickpea

Research Experience

Production of sugar beet Rhizomania tolerant phenotype by expression of P21 coat protein. Funded by NIGEB grant No.143.

Studying and optimization of *Agrobacterium*-mediated gene transfer into Sugar beet. Funded by NIGEB grant No.128.

Resistance to Rhizomania disease in transgenic Sugar beet by gene silencing. Supported by NIGEB, grant No. 165.

Functional analysis of isolated *Arabidopsis* acid phosphatase genes. Supported by NIGEB, grant No. 205.

Global expression analysis of *Arabidopsis thaliana* acid phosphatases. Funded by NIGEB grant No.224.

Production of salt tolerant plant phenotype by T-DNA activation tagging. Funded by NIGEB grant No.121.

Publication:

Zamani K, Mohsenpour M, Enayati Shariatpanahi M. Genome editing based CRISPR system in crop improvement. *Plant Mutagenesis: Sustainable Agriculture and Rural Landscapes*. Springer. (2024) In press

Zamani K, Mohsenpour M, Malboobi MA. Predicting the allergenic risk of Phosphite-NAD⁺-Oxidoreductase and purple acid phosphatase 17 proteins in genetically modified canola using bioinformatic approaches. *Food and Chemical Toxicology*. 2023 Dec 1;182:114094.

Malboobi, MA, Sabet, MS, **Zamani, K**, Lohrasebi T, Fathi Z, Zamani J (2023) Acid Phosphatases Roles in Plant Performance. In *Agricultural Biocatalysis* (pp. 117-157). Jenny Stanford Publishing.

Jamali Langeroudi A, Sabet MS, Jalali-Javaran M, **Zamani K**, Lohrasebi T, Malboobi MA. Functional assessment of AtPAP17; encoding a purple acid phosphatase involved in phosphate metabolism in *Arabidopsis thaliana*. *Biotechnology Letters*. 2023 Jun;45(5):719-39.

Fathi Z, **Zamani K**, Khosravi S, Malboobi M (2022) Functional Analysis of *AtPHT1*; 1 promoter in rapeseed (*Brassica napus L.*) heterologous system. *Crop Biotechnology*. (In Persian)

Chenarani, N, Emamjomeh, A, Rahnama, H, **Zamani, K**, & Solouki, M (2022). Characterization of sucrose binding protein as a seed-specific promoter in transgenic tobacco (*Nicotiana tabacum L.*). *PloS one*, 17(6), e0268036.

- Dashchi S, Rahnama H, Cheghamirza K, **Zamani K**. (2021) Construction of plant expression vectors harboring WRI1 and LPAAT genes and its transformation in tobacco plants. *Plant Genetic Researches*. 7(2):41-54. (In Persian)
- Fathi Z, **Zamani K**, Malboobi M (2021) Phosphite, biotechnology, modern agriculture. *Crop Biotechnology*. 10(32):55-70. (In Persian)
- Peykari N, Kordenaeej A, **Zamani K** (2021). Glyphosate resistance in transgenic Tobacco plants by expression of a modified EPSPS gene from chickpea. *Modern Genetics* 16(1): 17-23. (In Persian)
- Peykari N, **Zamani K** (2019) Cloning and characterization of a constitutive promoter of polyubiquitin gene from *Cicer arietinum*. *Crop Biotechnology*, 9(25): 35-45. (In Persian)
- Sabet MS, **Zamani K**, Lohrasebi T, Malboobi MA, Valizadeh M (2018) Functional assessment of an overexpressed Arabidopsis purple acid phosphatase gene (AtPAP26) in tobacco plants. *Iranian Journal of Biotechnology*, 16(1).
- Zare B, Niazi A, Sattari R, Aghelpasand H, **Zamani K**, Sabet MS, Moshiri F, Darabie S, Daneshvar MH, Norouzi P, Kazemi-Tabar SK. Resistance against rhizomania disease via RNA silencing in sugar beet. *Plant Pathology*. 2015 Feb;64(1):35-42.
- Malboobi MA, **Zamani K**, Lohrasebi T, Sarikhani MR, Samaian A, Sabet MS (2014) Phosphate: The silent challenge. *Progress in biological science*.
- Zamani K**, Lohrasebi T, Sabet MS, Malboobi MA, Mousavi A. (2014) Expression pattern and subcellular localization of Arabidopsis purple acid phosphatase AtPAP9. *Gene Expression Patterns*, 14(1), 9-18.
- Lohrasebi T, **Zamani K**, Sabet MS, Malboobi MA. (2013) Fungal infection alters phosphate and phosphatase profiles in Arabidopsis. *Progress in biological science*, 2(2): 42-57.
- Zamani K**, Sabet M, Lohrasebi T, Mousavi A, Malboobi M. (2012) Improved phosphate metabolism and biomass production by overexpression of AtPAP18 in tobacco. *Biologia*, 67(4):713-720.
- Feghhi SM, Norouzi P, Saidi A, **Zamani K**, Amiri R. (2012) Identification of SCAR and RAPD markers linked to RZ1 gene in Holly Sugar beet using BSA and two genetic distance estimation methods. *Electronic Journal of Plant Breeding*, 3(1):598-605.
- Norouzi P, Malboobi MA, **Zamani K**, Yazdi-Samadi B. (2005) Using a competent tissue for efficient transformation of sugar beet (*Beta vulgaris L.*). *In Vitro Cell. Dev. Biol.-Plant* 41(1):11-16.

Niazi A, Malboobi MA, Moeini A, Jalali JM, **Zamani K**, Lohrasbi T. (2005) Propagation of *Polymyxa Betae* on hairy root hydroponic culture. Iran. J. Plant Path. 41: 293-302 (In Persian).

Presentation:

Chenarani N, Emamjomeh A, Rahnama H, **Zamani K**, Solouki M (2021) Increasing seed oil content in tobacco plants by transferring DGAT1 gene. 4th International and 12th National Biotechnology Congress of Iran, Tehran, Iran.

Dashchi S, Cheghamirza K, Rahnama H, **Zamani K** (2020) Optimization of micropropagation protocol for commercial Iranian safflower (*Carthamus tinctorius* L) cultivars. 16th Congress of Crop Production and Plant Breeding Sciences of Iran, Khouzestan, Iran.

Dashchi S, Rahnama H, Cheghamirza K, **Zamani K**. (2020) Construction of plant expression vector harboring WR11 gene and its transformation in tobacco plants. 4th International and 16th National Genetic Congress of Iran, Karaj, Iran.

Zamani K, Peykari N, Khosravi S, Mohsenpour M (2017) Substitution of two amino acids in the 5-Enolpyruvylshikimate-3-Phosphate Synthase in chickpea and assessment of their function. 2nd International and 10th National Biotechnology Congress of Iran, Karaj, Iran.

Rastegari M, Lohrasebi T, **Zamani K**, Malboobi MA (2012) The study of purple acid phosphatase gene (PAP7) of *Arabidopsis thaliana* in response to phosphate starvation. The 17th National & 5th International Conference of Biology of Iran, Kerman, Iran.

Zamani K, Lohrasebi T, Sabet MS, Mousavi A, Malboobi MA (2011) Analysis of PAP9 promoter in *Arabidopsis thaliana*. The 7th National Biotechnology Congress of Iran, Tehran, Iran.

Sabet MS, **Zamani K**, Lohrasebi T, Malboobi MA (2011) Functional assessments of an overexpressed AtPAP26 gene in tobacco plants. The 7th National Biotechnology Congress of Iran, Tehran, Iran.

Sabet MS, Lohrasebi T, **Zamani K**, Malboobi MA (2011) Changes in the growth and gene expression patterns of PAP26 mutants of *Arabidopsis thaliana*. The 7th National Biotechnology Congress of Iran, Tehran, Iran.

Lohrasebi T, **Zamani K**, Sabet MS, Sobhe Bidari P, Manshaei R, Malboobi MA (2011) Compensation network among *Arabidopsis* acid phosphatase encoding genes to maintain cellular phosphate homeostasis. The 7th National Biotechnology Congress of Iran, Tehran, Iran.

Lohrasebi T, **Zamani K**, Sabet MS, Sobhe Bidari P, Malboobi MA (2011) Role of PHR1 and WRKY75 transcription factors in expression regulation of *Arabidopsis* Acid Phosphatase genes. The 7th National Biotechnology Congress of Iran, Tehran, Iran.

Aghelpasand H, Zare B, Niazi A, **Zamani K**, Malboobi MA, Norouzi P, Mahmoudi SB (2010) Evaluation of resistance in T1 progeny transgenic sugar beet plants to Rhizomania disease by gene silencing. 19th Iranian plant protection congress, Tehran, Iran.

Zare B, Sattari R, Niazi A, **Zamani K**, Lohrasebi T, Malboobi MA (2008) Application of RNAi silencing methods for obtaining transgenic sugar beet resistance to Rhizomania viral disease. 10th Iranian Genetics congress. Tehran, Iran.

Zare B, Sattari R, Niazi A, **Zamani K**, Lohrasebi T, Daneshvar MH, Malboobi MA (2008) Examination of relation between resistance to Rhizomania viral disease and transfer of RNA silencing induced constructs to sugar beet. 18th Iranian plant protection congress. Hamedan, Iran.

Zamani K, Lohrasebi T, Sabet MS, Malboobi MA (2009) The *Arabidopsis thaliana* *PAP9* gene encodes two splice form. The 6th National Biotechnology Congress of Iran, Tehran, Iran.

Zamani K, Lohrasebi T, Sabet MS, Sarikhani MR, Malboobi MA (2007) Functional analysis of *PAP18* gene encoding purple acid phosphatases in *Arabidopsis thaliana*. The 5th National Biotechnology Congress of Iran, Nov.24-26 Tehran, Iran.

Pajoum Shariati N, Malboobi MA, Arbabi M, Lohrasebi T, **Zamani K** (2005) Transfer of single chain antibody fragments (ScFv) specific for beet necrotic yellow vein virus coat protein to sugar beet. The 4th National Biotechnology Congress of Iran, Mahan, Iran.

Norouzi P, **Zamani K**, Mesbah M, Malboobi MA, Yazdi Samadi B (2004) The effect of antibiotics on the shoot regeneration inhibition and competent tissues introduction for Sugar beet transformation. 8th Congress of Crop Production and Plant Breeding Sciences of Iran, Rasht, Iran.

Norouzi P, **Zamani K**, Yazdi-Samadi B, Malboobi MA, Ghareyazi B, Sadeghian Y, Mesbah M (2002) Analysis of Sugar beet transformation methods by *Agrobacterium tumefaciens*. 7th Congress of Crop Production and Plant Breeding Sciences of Iran, Karaj, Iran.

Norouzi P, **Zamani K**, Tora T, Tian Y, Cai D, Malboobi MA, Ghareyazi B, Sadeghian Y, Mesbah M (2002) Sugar beet transformation by *Agrobacterium rhizogenes* for studying gene expression in hairy roots. 7th Congress of Crop Production and Plant Breeding Sciences of Iran, Karaj, Iran.

Zamani K, Sokhansandj A, Hashemi Sohi H, Malboobi MA, Ghorbanli M (2000) Production of transgenic *Arabidopsis* using plasmid containing enhancers. 6th Congress of Crop Production and Plant Breeding Sciences of Iran, Mazandaran, Iran.

Hashemi Sohi H, Salmanian AH, **Zamani K** (2000) Cloning and sequencing of coat protein gene (P21) of Iranian isolate of BNYVV (Beet Necrotic Yellow Vein Virus). 14th Iranian plant protection congress, Isfahan, Iran.

Patents:

Zamani K, Malboobi MA, Lohrasebi T, Esfahani K (2010) Expression vectors for production and purification of recombinant protein in plants. Iran patent No. 64775.

Malboobi MA, Norouzi P, **Zamani K** (2004) Application of leaf and shoot base explants for Sugar beet transformation. Iran patent No. 30138.

Skills and Expertise

• Laboratory Skills

Cloning and functional analysis plant genes, cloning and analysis of plant promoters, construction of binary vectors for plant transformation, PCR, RT-PCR and Quantitative RT-PCR, DNA and RNA extraction and related molecular biology skills, bacterial cultures and transformation, plant transformation (agrobacterium mediated and *In planta*), plant tissue culture (Canola, Sugar beet, Chickpea, Potato, Tobacco, Arabidopsis)

• Computer Skills

Various internet-based searches and using biological databases (NCBI, Ensemble, promoter database, ...), Analysis of sequence data, primer and construct design with several bioinformatics softwares such as DNASTAR Lasergene, Oligo