

## CURRICULUM VITAE



### 1-Personal Information:

Name: Fatemeh Zal  
Nationality: Iranian  
Address: Biochemistry Department, Shiraz University of Medical Sciences,  
Zand Street, Shiraz, Iran.  
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E-mail: fatemehzal@ yahoo.com; zalf @sums.ac.ir  
Languages: Persian/English

### 2-Education:

2017- now Associate professor of biochemistry  
Shiraz University of Medical Sciences, Shiraz, Iran  
2009- 2017 Assistant professor of biochemistry  
Shiraz University of Medical Sciences, Shiraz, Iran  
2002-2009 PhD in Clinical Biochemistry, biochemistry Department,  
Shiraz University of Medical Sciences, Shiraz, Iran.  
2008-2009 PhD sabbatical opportunity. Melborne University  
1999-2001 M.Sc. in Biochemistry. Biochemistry Department

Shiraz University of Medical Sciences, Shiraz, Iran.

1994-1998

B. Sc. in Nutrition,. Isfahan University of Medical Sciences.  
Isfahan,Iran.

### **3-Honors:**

Tired rank in PhD examination.

First top student throughout M.Sc. course

### **4-Experimental skills:**

- Work with rat, gavage feeding to rat, Iv injection, IP injection.
- Glucose Tolerance Test Assay(GTT)
- Enzyme assay
  - Kinetic assay
  - End point assay
- DNA and RNA extraction
- Antioxidant enzymes assay  
(MDA, glutathion peroxidase, Catalase, Superoxide Dismutase)
- Primary cell culture (endometrial)
- Adhesion Assay
- Spreading Assay
- Flow cytometry
- Immunofluorcent microscopy
- RT-PCR
- Real-Time PCR technique
- Cell Protein extraction and protein assay
- Western blot technique
- Serum free cell culture

- SiRNA knocking down

## **5-Position Helds:**

1. Research assistant in Biochemistry Department, Shiraz University of Medical Sciences, 1999-2001.
2. Research assistant in Biochemistry Department, Hamadan University of Medical Sciences, 2001-2002.
3. Research Fellow in Transplant Research Center, Shiraz University of Medical Sciences, 2002-2009.
4. Research Fellow in Melbourne University (Australia) 2008-2009.
5. Member of reproductive biology group in School of advanced medical Sciences and technologies (2009- now)
6. Vice chancellor for education in School of advanced medical Sciences and technologies (2012-2015)
7. Member of infertility research group (2012-now)

## **6- Publications**

**1- Zal, F.,** Vasei, M., Rasti, M., Vessal, M. (2001). Hepatotoxicity association with hypoglycemic. Effects of technetium polium in diabetic rats. **Arch of Iranian Medicine**, 4(4); 188-192.

2- Vessal, M., **Zal, F.**, Vasei, M. (2003). Effects of technetium polium oral glucose tolerance test, regeneration of pancreatic islets and activity of hepatic glucokinase in diabetic rats. **Arch of Iranian Medicine**, 6(1); 35-39.

3-Goodarzi, MT., Safari, MR., **Zal, F.** (2006). Inhibitory action of vit. C and mannitol on induced cytotoxic effect of glycated protein-metal ion on rat hepatocyte.

**International Journal of Pharmacology**. 2(2); 201-204.

4- Goodarzi, MT., Safari, MR., **Zal, F.** (2006). Cytotoxic effect of "glycated albumin-transition metal ion" on rat hepatocyte suspension. **Iranian Biomedical Journal** 10(3);139-143.

5-Goodarzi, MT., **Zal, F.**, Malakooti, M., Safari, MR., Sadeghian, S. (2006). Inhibitory activity of flavonoids on the lens aldose reductase of healthy and diabetic rats. **Acta Medica Iranica**, 44(1); 41-45.

**6- Zal, F.**, Mostafavi-pour, Z., Vessal, M. (2007). Comparison of the effects of vitamin E and/or quercetin in attenuating chronic cyclosporine A-induced nephrotoxicity in male rats. **Clinical Experimental Pharmacology and Physiology**, 34; 720-724.

7-Mostafavi-pour, Z., **Zal, F.**, Monabati, A., Vessal, M. The protective effects of a combination of quercetin and vitamin E against cyclosporine A-induced oxidative stress and hepatotoxicity in rats. **Hepatology Research**. 2008 Apr;38(4):385-92.

8-Zohreh Mostafavi-Pour, Mahmood Vessal, **Fatemeh Zal**, Zahra Khoshdel and Simin Torabinejad. (2009). Protective Effects of Vitamin E and/or Quercetin Co-supplementation on the Morphology of Kidney in Cyclosporine A Treated Rats. **IJMS**. Vol 34, No 4,

9-Michael Schuliga , Siau Chi Ong , Lilian Soon , **Fatemeh Zal** , Trudi Harris , Alastair Stewart. (2010). Airway smooth muscle remodeling of collagen fibrils. **American Journal of Physiology - Lung Cellular and Molecular Physiology**. 2010 Apr;298(4):L584-92

10- **Zal F.**, Mostafavi-Pour Z, Amini F, Heidari A: Effect of vitamin E and C supplements on lipid peroxidation and GSH-dependent antioxidant enzymes status in the blood of women consuming oral contraceptives. **contraception** 2012, Jul;86(1):62-6.

11- Mostafavi-Pour Z, Khademi F, **Zal F\***, Sardarian AR, Amini F. In vitro analysis of CsA-induced hepatotoxicity in HepG2 cell line: Oxidative stress and  $\alpha 2$  and  $\beta 1$  integrin subunits expression. **Hepatitis Monthly**. 2013 August; 13(8): e11447.

12- **Fatemeh Zal**, Aida Jafarian, M. Reza Hajizadeh, Akbar Safaei, Ramin Miri, Zohreh Mostafavi-pour\*. Novel and safe therapeutic effects of Walnut Male Flower extract on islets regeneration and glucokinase activity in streptozocin induced diabetic rats. **Diabetes, Stoffweches and Hez**. 2013; 22:283-287.

13- Tahereh Mashhoody, KarimRastegar, **Fatemeh Zal\***. Perindopril may improve the glutathione status in the hippocampus of normal adult rats. **Advanced Pharmaceutical Bulletin**. Advanced Pharmaceutical Bulletin 4 (2), pp. 155-159.

14- Raheleh Assaei, **Fatemeh Zal\***, Zohreh Mostafavi-Pour, Mohammad Hossein Dabbaghmanesh, Bita Geramizadeh, Gholam Hossein Ranjbar Omrani, Naser Pajouhi. Hepatoprotective effect of *Satureja khuzestanica* essential oil and vitamin E in experimental hyperthyroid rats: evidence for role of antioxidant effect. Iranian journal of medical sciences 09/2014; 39(5):459-66.

15- **Fatemeh Zal**, Zohreh Mostafavi-Pour, Afagh Moattari, Ahmad-reza Sardarian and Mahmood Vessal. Altered expression of  $\alpha 2\beta 1$  integrin in kidney fibroblasts: A potential mechanism for CsA-induced nephrotoxicity. Archives of Iranian Medicine, Volume 17, Issue 8, August 2014, Pages 556-562.

16- Shahnaz Torkzahrani, Afrooz Heidari, Zohreh Mostafavi-pour, Majid Ahmadi, **Fatemeh Zal\***. Amelioration of lipid abnormalities by vitamin therapy in women on oral contraceptives. Clinical and Experimental Reproductive Medicine, Volume 41, Issue 1, March 2014, Pages 15-20.

17- Hajizadeh MR, Eftekhar E, **Zal F**, Jafarian A and Mostafavi-pour Z. Mulberry leaf extract attenuate oxidative stress mediated testosterone depletion in streptozotocin-induced diabetic rats. Iranian Journal of Medical Sciences, Volume 39, Issue 2, 2014, Pages 123-129.

18- **Zal F**, Taheri R, Khademi F, Keshavarz E, Mostafavi-pour Z. Comparison effect of propranolol as a  $\beta$ -blocker drug alone and with a diuretic drug on oxidative stress and glutathione homeostasis in ACHN kidney cells. Toxicology Mechanisms and Methods, Volume 24, Issue 6, September 2014, Pages 412-416.

19- Sardarian AR, Andishetadbir A, **Zal F**, Amini F, Jafarian A, Khademi F, Mostafavi-pour Z. Oxidative status & integrin expression in CsA-treated oral epithelial cells. Toxicol Mech Methods. 2014 Nov 24:1-24

20- Khansha R, Miladpour B, Mostafavi-Pour Z, **Zal F**\*. Lipid Peroxidation and Glutathione Levels in Patients with Coronary Heart Disease before and after Surgery. GMJ.2015;4(2):78-82.

21- **Zal F**, Mahdian M, Bahman-Pour S, Zare R, Mostafavi-Pour Z. A Combination of Vitamin E and Folic acid Ameliorate Oxidative Stress and Apoptosis in Diabetic Rat Uterus. Int. J. Vitam. Nutr. Res., 84 (1 – 2), 2014, 55 – 64.

22 - **Fatemeh Zal**, Behnoosh Miladpour, Raheleh Taheri, Iman Heidari,Zohreh Mostafavi-pour. Estrogen and/or Progesterone Effects on HepG2 Human Cell Lines; Oxidant or Antioxidant? JAMSAT, 2015; 1(1).

23- Effect of 900 MHz electromagnetic radiation on the induction of ROS in human peripheral blood mononuclear cells .Kazemi, E, Mortazavi, S.M.J , Ali-Ghanbari, A, Sharifzadeh, S, Ranjbaran, R, Mostafavi-Pour, Z, **Zal, F**, Haghani, M.

Journal of Biomedical Physics and Engineering. Volume 5, Issue 3, 4 September 2015, 105-114.

24- The effect of superposition of 900 MHz and incoherent noise electromagnetic fields on the induction of reactive oxygen species in SP2/0 cell line. Kazemi, E, Mortazavi, S.M.J , Ali Ghanbari, A, Mozdarani, H, Sharif-Zadeh, S, Mostafavi-Pour, Z, **Zal, F**, Haghdoost, S. International Journal of Radiation Research. Volume 13, Issue 3, July 2015, 275-280

25- Raheleh Assaei · Zohreh Mostafavi-Pour, Naser Pajouhi, GholamHossein Ranjbar Omrani, Masood Sepehrimanesh, **Fatemeh Zal**, Effects of Essential Oil of *Satureja khuzestanica* on the Oxidative Stress in Experimental Induced Hyperthyroidism in Male Rat. Veterinary Research Forum. 2015; 6 (3) 233 – 238.

26- Assaei, R., Mokarram, P., Dastghaib, S., Darbandi, S., Darbandi, M., **Zal, F.**, Akmal, M., Ranjbar Omrani, G.H., Hypoglycemic effect of aquatic extract of *Stevia* in pancreas of diabetic rats: PPAR $\gamma$  -dependent regulation or antioxidant potential. Avicenna Journal of Medical Biotechnology, Volume 8, Issue 2, April-June 2016, 65-74.

27- Totonchi, H, Miladpour, B, Mostafavi-Pour, Z, Khademi, F, Kasraeian, M, **Zal, F\***. Quantitative analysis of expression level of estrogen and progesterone receptors and VEGF genes in human endometrial stromal cells after treatment with nicotine. Toxicology Mechanisms and Methods Volume 26, Issue 8, 12 October 2016, 595-600

28- Alavi, M, **Zal, F**, Zamani, F, Kazemi, M, Rasti, M. Evaluation of a number of blood biochemical markers after radioiodine therapy in papillary thyroid cancer patients. Middle East Journal of Cancer, Volume 8, Issue 2, April 2017, Pages 77-82.

29- Miladpour, B, Rasti, M, Owji, A.A, Mostafavipour, Z, Khoshdel, Z, Noorafshan, A, **Zal, F\***. Quercetin potentiates transdifferentiation of bone marrow mesenchymal stem cells

into the beta cells in vitro. Journal of Endocrinological Investigation Volume 40, Issue 5, 1 May 2017, 513-521

30- Mortazavi, S.M.J, Mostafavi-Pour, Z, Daneshmand, M, **Zal, F**, Zare, R, Mosleh-Shirazi, M.A. Adaptive response induced by pre-exposure to 915 MHz radiofrequency: A possible role for antioxidant enzyme activity. Journal of Biomedical Physics and Engineering Open Access Volume 7, Issue 2, June 2017, 137-142.

31- Sarabi, M.M, Ghareghani, P, Khademi, F, **Zal, F\***. Oral contraceptive use may modulate global genomic DNA methylation and promoter methylation of APC1 and ESR1. Asian Pacific Journal of Cancer Prevention. Volume 18, Issue 9, 1 September 2017, 2361-2366.

32- Yarahmadi, A, **Zal, F\***, Bolouki, A. Protective effects of quercetin on nicotine induced oxidative stress in 'HepG2 cells. Toxicology Mechanisms and Methods Volume 27, Issue 8, 13 October 2017, 609-614.

33- **Zal, F**, Khademi, F, Taheri, R, Mostafavi-Pour, Z. Antioxidant ameliorating effects against H<sub>2</sub>O<sub>2</sub>-induced cytotoxicity in primary endometrial cells. Toxicology Mechanisms and Methods Volume 28, Issue 2, 12 February 2018, 122-129.

34- Sadegh Rajabi ,Shokoofeh Noori, **Fatemeh Zal**, Ali Jahanbazi jahan-abad. Oxidative Stress and its Different Roles in Neurodegenerative Diseases. March 2017, The Neuroscience Journal of Shefaye Khatam 5(1):73-86.

35- M. Sargazi, **Fatemeh Zal**, N. Karbalaeei. Effects of cadmium on oxidative stress markers, and insulin secretion and content in pancreatic isolated islet of rats. March 2018, Journal of Mazandaran University of Medical Sciences 27(158):1-14.



- 36- Amir Yarahmadi, Fatemeh Khademi, Zohreh Mostafavi-Pour, **Fatemeh Zal\***. In-Vitro Analysis of Glucose and Quercetin Effects on m-TOR and Nrf-2 Expression in HepG2 Cell Line (Diabetes and Cancer Connection). May 2018, Nutrition and Cancer 70(5):1-6
- 37- Esmail Jafari, Mehrosadat Alavi, **Fatemeh Zal**. The evaluation of protective and mitigating effects of vitamin C against side effects induced by radioiodine therapy. June 2018 Biophysik 57(3)
- 38- Asma Neisy, **Fatemeh Zal\***, Atefeh Seghatoleslam, Sanaz Alaei. Amelioration by quercetin of insulin resistance and uterine GLUT4 and ER $\alpha$  gene expression in rats with polycystic ovary syndrome (PCOS). August 2018, Reproduction Fertility and Development 31(2)
- 39- Fatemeh Khademi, Hamidreza Totonchi, Neda Mohammadi, **Fatemeh Zal\*** Nicotine-Induced Oxidative Stress in Human Primary Endometrial Cells. May 2019 International Journal of Toxicology 38(2):109158181984808
- 40- Navid Jamali, Zohreh Mostafavi-Pour, ....**Fatemeh Zal**. Combination Effect of Caffeine and Caffeic Acid Treatment on the Oxidant Status of Ectopic Endometrial Cells Separated from Patients with Endometriosis. July 2019, Iranian Journal of Medical Sciences 44(4)
- 41- Majid Jafari Khorchani, **Fatemeh Zal\***, Asma Neisy. The phytoestrogen, quercetin, in serum, uterus and ovary as a potential treatment for dehydroepiandrosterone-induced polycystic ovary syndrome in the rat. October 2019, Reproduction Fertility and Development 32(3).
- 42- Bolouki, A., **Zal, F\***, Mostafavi-pour, Z., Bakhtari, A.

Protective effects of quercetin on uterine receptivity markers and blastocyst implantation rate in diabetic pregnant mice .Taiwanese Journal of Obstetrics and Gynecology, 2020

43- Bolouki, A., **Zal, F\***. Impact of war on fertility and infertility .Archives of Iranian Medicine, 2020, 23(4), pp. S16-S22

**44- Zal, F.**, Yarahmadi, A., Totonchi, H., Barazesh, M., Moradi Sarabi, M. Nicotine attenuates global genomic DNA methylation by influencing DNMTs gene expression in human endometrial stromal cells .Genes and Environment, 2020, 42(1), 6

45- Masjedi, F., Keshtgar, S., **Zal, F.**, ...Fallahi, S., Kazeroni, M. Effects of vitamin D on steroidogenesis, reactive oxygen species production, and enzymatic antioxidant defense in human granulosa cells of normal and polycystic ovaries Journal of Steroid Biochemistry and Molecular Biology, 2020, 197, 105521

46- Bolouki, A., **Zal, F\***., Alaei, S. Ameliorative effects of quercetin on the preimplantation embryos development in diabetic pregnant mice .Journal of Obstetrics and Gynaecology Research, 2020, 46(5), pp. 736-744

**47- Zal, F.**, Ahmadi, P., Davari, M., ...Anvar, Z., Namavar Jahromi, B. Glutathione-dependent enzymes in the follicular fluid of the first-retrieved oocyte and their impact on oocyte and embryos in polycystic ovary syndrome: A cross-sectional study International Journal of Reproductive BioMedicine, 2020, 18(6), pp. 415-424

48- Samare-Najaf, M., **Zal, F\***., Safari, S. Primary and Secondary Markers of Doxorubicin-Induced Female Infertility and the Alleviative Properties of Quercetin and Vitamin E in a Rat Model .Reproductive Toxicology, 2020, 96, pp. 316-326.

- 49- Bolouki, A., **Zal, F\***., Bordbar, H. Ameliorative effects of quercetin on folliculogenesis in diabetic mice: a stereological study .Gynecological Endocrinology, 2020, 36(10), pp. 864-868.
- 50- Samare-Najaf, M., **Zal, F\***., Safari, S., Koohepeyma, F., Jamali, N. Stereological and histopathological evaluation of doxorubicin-induced toxicity in female rats' ovary and uterus and palliative effects of quercetin and vitamin E .Human and Experimental Toxicology, 2020, 39(12), pp. 1710-1724.
- 51- Vakili, S., **Zal, F\***., Mostafavi-pour, Z., Savardashtaki, A., Koohepeyma, F. Quercetin and vitamin E alleviate ovariectomy-induced osteoporosis by modulating autophagy and apoptosis in rat bone cells.Journal of Cellular Physiology, 2021, 236(5), pp. 3495–3509
- 52- Jamali, N., Mostafavi-Pour, Z., **Zal, F.**, ...Poordast, T., Nejabat, N.Antioxidant ameliorative effect of caffeic acid on the ectopic endometrial cells separated from patients with endometriosis. Taiwanese Journal of Obstetrics and Gynecology, 2021, 60(2), pp. 216–220
- 53- Jamali, N., **Zal, F\***., Mostafavi-Pour, Z., ...Poordast, T., Dehghanian, A. Ameliorative Effects of Quercetin and Metformin and Their Combination Against Experimental Endometriosis in Rats. Reproductive Sciences, 2021, 28(3), pp. 683–692
- 54- Seghatoleslam, A., Khoshdel, Z., Ghafouri, R., ...Namavari, M., **Zal, F\***. Composition and Anti-Toxicity Effects of Cichorium intybus Distillate on Serum Antioxidant Status in Carbon Tetrachloride-Treated Rats. Archives of Razi Institute, 2021, 76(1), pp. 107–117

55- Jafari Khorchani, M., Samare-Najaf, M., Abbasi, A., Vakili, S., **Zal, F\***. Effects of quercetin, vitamin E, and estrogen on Metabolic-Related factors in uterus and serum of ovariectomized rat models. *Gynecological Endocrinology*, 2021. In press

### **7-Congress presentation:**

- **6th Iranian congress of Biochemistry, Iran University of Medical Sciences, 2002.**

Effects of teucrium polium oral glucose tolerance test, regeneration of pancreatic islets and activity of hepatic glucokinase in diabetic rats.

- **7th Iranian congress of Biochemistry, Ahwaz University of Medical Sciences, Iran, 26-29 Jan 2004.**

Inhibitory activity of flavonoids on the lens aldose reductase of healthy and diabetic rats

- **First International Congress of Biochemistry & Molecular Biology, 2005, Tehran/Iran**

Hepatotoxicity associated with hypoglycemic effects of Teucrium Polium diabetic rats,

- **The 9th Iranian Congress of Toxicology, May 15-17, 2007 Shiraz, Iran**

The protective effects of a antioxidants against cyclosporine A-induced oxidative stress and hepatotoxicity in rats.

- **The 9th Iranian Congress of Biochemistry & 2nd International Congress of Biochemistry and Molecular Biology, Oct 29-Nov 1, 2007, Shiraz, Iran**

Comparison of the effects of vitamin E and/or quercetin in attenuating chronic cyclosporine A-induced nephrotoxicity in male rats.

- **The 13th Iranian Congress of Biochemistry & 5th International Congress of Biochemistry and Molecular Biology, Apr 16, 2013, Yazd/Iran.**

Alleviation of liver lipid peroxidation and glutathione redox status in experimental hyperthyroid rat by *Satureja khuzestanica* essential oil and vitamin

- **The 13th Iranian Congress of Biochemistry & 5th International Congress of Biochemistry and Molecular Biology, Apr 16, 2013, Yazd/Iran.**

Synergistic effect of Furosemide and Propranolol on glutathione production in kidney cell lines.

- **The 13th Iranian Congress of Biochemistry & 5th International Congress of Biochemistry and Molecular Biology, Apr 16, 2013, Yazd/Iran.**

Effect of Cyclosporin A on albumin and urea secretion in cultured human hepatocytes

- **The 13th Iranian Congress of Biochemistry & 5th International Congress of Biochemistry and Molecular Biology, Apr 16, 2013, Yazd/Iran.**

Folate co-administration with an antioxidant restore GSH balance in H<sub>2</sub>O<sub>2</sub>- induced oxidative stress in primary endometrial cells

- **The 2th international conference on women's health. May 1-2, 2013, Shiraz/Iran.**

Amelioration of lipid abnormalities by vitamin therapy in women on oral contraceptives

- **2nd National & 1st International congress on Cellular and Molecular Advances in Non-Contagious Diseases. May 16-18, 2011, Babol, Iran.**

Effect of *Juglan Regia* flower on activity of hepatic glucokinase in diabetic rats

- **First International congress on reproductive medicine.**

Fertility impairment caused by diabetes induced endometrial oxidative damage and apoptosis. Tehran. 2015

- **First International congress on reproductive medicine.**

Long and short term effects of nitroglycerine treatment on the rat uterus oxidant status in the time of implantation. Tehran, 2015

**IFCC congress**, Greece, Athens, 2017. Promoter Methylation Status of BRCA1 and BRCA2 in women consuming oral contraceptives