Fateme Binayi

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EDUCATION

Ph.D. in Medical Physiology
Shahid Beheshti University of Medical Sciences (SBMU) 2015-2021
Thesis: Investigation of long-term consumption of a High Fat Diet effect on ER stress induction and alteration of WFS1 expression in relation to pancreatic isolated islets' insulin content and secretion in male rat.
GPA: 17.41 out of 20 (A^+)
Supervisor: Prof. Homeira Zardooz

Professional Skills Problem Solving, Team Work, Root Cause Analysis, Negotiation Skills, Communication, Leadership

Language Persian: Native, English: Fluent

Lab Proficiency

Animal Models:

- **Isolation Endoplasmic reticulum from pancreatic cytoplasm using ultracentrifuge method**,
- **Isolation of islets from pancreas**
- Cannulation in the atrium of the heart through the carotid artery,
- Recording blood pressure, ECG, and arrhythmia induction in rat,
- Harvesting of rat abdominal organs (Like: pancreas, heart, etc.),
- Taking blood from the tail or eyes,
- Tail Intravenous drug injection,
- Ovariectomy,
- Lysis of tissue and isolation suspension from it,
- Oral and intraperitoneal glucose tolerance test,
- Making high fat diet,
- Testing swimming endurance in mice,
- Determining the Estrous cycle in female rat (using vaginal samples and violet stain)

Molecular Technique:

- ELISA test
- Western Blot
- RT-PCR
- Bradford protein assay
- Ellman and Goth methods (for assessment of pancreatic GSH level and catalase activity)

Behavioral Test:

- Morris Water Maze
- Barnes Maze
- Plus Elevated Maze
- T-maze
- Open field

Technical/Computer Skills

- Prism, Endnote/Mendeley,
- Statistics/SPSS,
- ImageJ- Auto Vision

PUBLICATIONS

1-Fateme Binayi, Javad Fahanik-Babaei, Mina Salimi, Farzaneh Eskandari, Mohammad Sahraei, Ali Ghorbani Ranjbary, Rasoul Ghasemi, Mehdi Hedayati, Fariba Khodagholi, Afsaneh Eliassi, Homeira Zardooz, (2022). "Endoplasmic reticulum stress inhibition ameliorated WFS1 expression alterations and reduced pancreatic islets' insulin secretion induced by high fat diet in rats", ***Nature, Scientific Reports***, (IF. 4.99/Q1), (***https://www.nature.com/articles/s41598-023-28329-1***).

2-Fateme Binayi, Behnam Saeidi, Fatemeh Farahani, Mina Sadat Izadi, Farzaneh Eskandari, Fariba Azarkish, Mohammad Sahraei, Rasoul Ghasemi, Fariba Khodagholi, Homeira Zardooz, (2024). "Sustained feeding of a diet high in fat resulted in a decline in the liver's insulin-degrading enzyme levels in association with the induction of oxidative and endoplasmic reticulum stress in adult male rats: Evaluation of 4-phenylbutyric acid", ***Heliyon Journal***, (IF. 4/Q1), e32804.

3-Binayi, F., Zardooz, H., Ghasemi, R., Hedayati, M., Askari, S., Pouriran, R., & Sahraei, M. (2021). "The chemical chaperon 4-phenyl butyric acid restored high-fat diet-induced hippocampal insulin content and insulin receptor level reduction along with spatial learning and memory deficits in male rats". *Physiology & Behavior*, (IF. 3.742/ Q1), 231, 113312.

4-Binayi, F., Moslemi, M., Khodagholi, F., Hedayati, M., & Zardooz, H. (2020). "Long-term high-fat diet disrupts lipid metabolism and causes inflammation in adult male rats: possible intervention of endoplasmic reticulum stress". *Archives of Physiology and Biochemistry*, (IF. 4.7/ Q1), 1-9.

5-Binayi, F., Joukar, S., Najafipour, H., Karimi, A., Abdollahi, F., & Masumi, Y. (2016). "The effects of Nandrolone decanoate along with prolonged low-intensity exercise on susceptibility to ventricular arrhythmias". *Cardiovascular Toxicology*, (IF. 2.77/ Q2), 16(1), 23-33.

6-F Binayi, H Zardooz, K Fariba, H Mehdi, S Mohammad (2022). "IDF21-0059 The effect of chronic high-fat feeding on ER stress and WFS1 expression along with insulin content and secretion". *Diabetes Research and Clinical Practice*, (IF. 5.1/ Q1).

7- Payam Shahsavar, **Fateme Binayi**, Mina Sadat Izadi1, Mina Salimi1, Mehdi Hedayati, Rasoul Ghasemi, Homeira Zardooz (2024), "Royal jelly effect on chronic unpredictable stress-induced pancreatic oxidative and endoplasmic reticulum stress and insulin secretion impairment in adult male rats". *Journal of Food Biochemistry*, (IF. 4.0/Q1).

8- Namvar, Z, Ramezani Tehrani.F, Shahsavani.A, Khodagholi.F, Hashemi.S, **Binayi.F,** Salimi.F, Abdollahifar.MA, Philip.K, Hopke.H.I, Mohseni-Bandpei.A, (2023), "Reduction of ovarian reserves and activation of necroptosis to in vivo air pollution exposures". *International Journal of Environmental Health Research*, (IF. 4.16/ Q1).

9- M. Izadi, F. Eskandari, **F. Binayi,** M. Salimi, F. Rashidi, M. Hedayati, L. Dargahi, H. Ghanbarian, H. Zardooz, (2022) "Oxidative and endoplasmic reticulum stress develop adverse metabolic effects due to the high-fat high-fructose diet consumption from birth to young adulthood". *Life Sciences*, (IF. 6.78/ Q1), Volume 308, available online.

10- Maghami, S., Zardooz, H., Khodagholi, F., **Binayi, F.,** Ranjbar Saber, R., Hedayati, M., & Ansari, M. A. (2018). "Maternal separation blunted spatial memory formation independent of peripheral and hippocampal insulin content in young adult male rats*". PLOS ONE*, (IF. 4.99/ Q1), 13(10), e0204731.

11- Mina Salimi, Farzaneh Eskandari**, F. Binayi,** Afsaneh Eliassi, Hossein Ghanbarian, Mehdi Hedayati, Javad Fahanik-babaei, Mohamad Eftekhary, Rana Keyhanmanesh &Homeira Zardooz. (2022). "Maternal stress induced endoplasmic reticulum stress and impaired pancreatic islets insulin secretion via glucocorticoid receptor upregulation in adult male rat offspring". *Scientific Reports*, (IF. 4.99/ Q1), available online

12- Farzaneh Eskandari, Mina Salimi, **Fateme Binayi,** Mohammad-Amin Abdollahifar, Mohamad Eftekhary, Mehdi Hedayati, Hossein Ghanbarian, Homeira Zardooz (2022). "Investigating the Effects of Maternal Separation on Hypothalamic-Pituitary-Adrenal Axis and Glucose Homeostasis under Chronic

Social Defeat Stress in Young Adult Male Rat Offspring". *Neuroendocrinology*, (IF. 5.13/ Q1), DOI: 10.1159/000526989.

13- Abdollahi, F., Joukar, S., Najafipour, H., Karimi, A., Masumi, Y., & **Binayi, F**. (2016). "The risk of life-threatening ventricular arrhythmias in presence of high-intensity endurance exercise along with chronic administration of nandrolone decanoate". *Steroids*, (IF. 2.76/ Q2), 105, 106-112.

14- F. Binayi, (2023), postnatal stress combined with saffron extract induces insulin resistance and anxiety behavior (Submitted).

15- I have two collaborative projects that we are working on including:

A: Investigating the impact of 4-phenylbutyric acid on systemic and local oxidative and inflammatory damage in type 2 diabetes induced by high-fat and fructose-streptozotocin diet in male rats

B: Investigating the effect of 4-phenylbutyric acid (4-PBA) on endoplasmic reticulum stress markers and WFS1 level in relation to amount of insulin secretion from isolated pancreatic islets in male rats with type 2 diabetes induced by a high-fat and fructose-streptozotocin diet.

Conferences & Congress Certification

The 21th International Congress of Endocrinology (ICE, Dubai)	Mar 2024
International Diabetes Federation (IDF) Virtual Congress	Dec 2022
International Diabetes Federation (IDF) Virtual Congress	Dec 2021
The 13th International Congress of Endocrine Disorders	Nov 2021
The 11th Royan International E-summer School on Interdisciplinary Approaches to Diabetes	Dec 2020
4th International Congress of Turkish Neuroendocrinology	Nov 2020
2nd International and 23rd Iranian Congress of Physiology and Pharmacology, Chabahar, Iran	Feb 2018
1st International and 22nd Iranian Congress of Physiology and Pharmacology, Kashan, Iran	Sep 2015
3rd International Preventive Cardiology Congress, Shiraz, Iran	Oct 2014

Professional Work Experiences

Researcher at Dr. Homeira Zardooz's lab (SBMU, Tehran, Iran)	Jun 2021-Now
Second International Course on Laboratory Animal Science	1-30 Jan 2020

Honors and Prizes

Ranked 1st among approximately 1400 examinees in the nationwide entrance exam for PhD programs

Ministry of Healthcare, Iran (2015)

The Best Poster Award (Top Poster Paper, presented online) Nov 2020, Congress of Turkish

Google scholar address

https://scholar.google.com/citations?hl=en&user=bSVhDGQAAAAJ&view_op=list_works&sortby=pubdate

References

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