

CURRICULUM VITAE

Zahra Jalali

contact

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EMPLOYMENT:

Assistant Professor

Rafsanjan University of Medical Sciences (RUMS)

Rafsanjan, Iran

since 2017

EDUCATION:

McGill University

PhD, Biochemistry

Montreal, Canada

May 2016

University of Tehran

MSc, Medical Biotechnology

Tehran, Iran

May 2010

University of Tehran

Tehran, Iran

BSc, Biotechnology

May 2007

RESEARCH EXPERIENCE:

RUMS University

Assistant Professor, Biochemistry

Rafsanjan, Iran
since 2017

- o Study of transgenerational and parental lifestyle risk factors for diseases such as obesity and metabolic syndrome in offspring
- o Aging and related factors
- o Population-based studies in Prospective Rafsanjan Cohort Studies, part of *PERSIAN*
- o Computational analysis of biological data on molecular evolution and cancer genetic diversity

McGill University

PhD, Biochemistry

Montreal, Canada

2011-2016

Functional characterization of the folliculin tumor suppressor associated with inherited BHD cancer-predisposition syndrome

- Genetic, biochemistry, and cellular molecular analysis to understand the underlying mechanism of BHD cancer-predisposition syndrome upon loss of the folliculin tumor suppressor using mammalian cells and the *C. elegans* model.
- Characterization of the function of folliculin as a negative regulator of stress kinase AMPK, HIF, and PCG1 and autophagy using genetic and biochemistry experiments and microscopy.
- Mechanism of metabolic and oxidative stress resistance regulation by folliculin affecting AMPK signaling
- Protein-protein interaction analysis and in vitro functional assays to characterize folliculin protein complexes in the cell and to understand the cellular function of its protein-protein interactions.

University of Tehran

Tehran, Iran

MSc student, Medical Biotechnology

2008-2010

Characterization of the role of ABC transporters in multidrug resistance in different tumor types.

- Examined the role of ABC transporters in drug efflux and multidrug resistance to Doxorubicin, tamoxifen, and mitoxantrone in tumor cells using RNAi, cytotoxicity assays and flow cytometry analysis.

HONORS and AWARDS

- Ranked **16th in Iran's national entrance exam for universities** 2003
- Chemical Biology Program Stipend Award, Biochemistry Department, McGill University 2014
- Graduate Excellence Fellowship, Biochemistry Department, McGill University 2012-2015

PUBLICATIONS:

Molecular research:

Ohadi, H., Khalili, P., Abasnezhad Kasrineh, F., Esmaeili, O. S., Esmaeili Ranjbar, F., Manshoori, A., ... & **Jalali, Z.** (2024). Umbilical cord blood thyroid hormones are inversely related to telomere length and mitochondrial DNA copy number. **Scientific Reports**, 14(1), 3164.

Rahimi Mehdi Abad F, Khalili P, Jalali F, Pirsadeghi A, Esmaeili Nadimi A , Manshoori A, **Jalali Z**
Maternal opioid use is reflected on leukocyte telomere length of male newborns. **PLoS One**. 10.1371/journal.pone.0261013

Parvaz N, **Jalali Z**. Molecular evolution of PCSK family: Analysis of natural selection rate and gene loss. **PLoS One**. 2021;16(10):e0259085. Published 2021 Oct 28. doi:10.1371/journal.pone.0259085

Jalali Z*, Parvaz N*. Molecular evolution of autophagy rate-limiting factor LAMP2 in placental mammals. **Gene** 2020

Abad FR, Hajizadeh MR, Mahmoodi M, **Jalali Z**, Kazeruni FN, Swann J, Hosseiniara R, Karimabad MN. Evaluation of H19, Mest, Meg3, and Peg3 genes affecting growth and metabolism in umbilical cord blood cells of infants born to mothers with gestational diabetes and healthy mothers in Rafsanjan City, Iran. *Journal of Developmental Origins of Health and Disease*. 2023 Apr;14(2):182-9.

Salemi S, Zamanian MY, Giménez-Llort L, **Jalali Z**, Mahmoodi M, Golmohammadi M, Kaeidi A, Taghipour Z, Khademalhosseini M, Modanloo M, Hajizadehi MR. Distinct signatures on d-galactose-induced aging and preventive/protective potency of two low-dose vitamin D supplementation regimens on working memory, muscular damage, cardiac and cerebral oxidative stress, and SIRT1 and calstabin2 downregulation. *Food Science & Nutrition*. 2023.

Jalali Z, Khademalhosseini M, Soltani N, Esmaeili Nadimi A. Smoking, alcohol and opioids effect on coronary microcirculation: an update overview. *BMC Cardiovasc Disord*. 2021 Apr 15;21(1):185. doi: 10.1186/s12872-021-01990-y. PMID: 33858347; PMCID: PMC8051045.

Jalali Z*, Possik E*, Nouët Y, Yan M, Gingras M-C, Schmeisser K, Panaite L, Dupuy F, Kharitidi D, Chotard L, Jones RG, Hall DH, Pause A. Folliculin Regulates Ampk-Dependent Autophagy and Metabolic Stress Survival. *PLoS Genet*. 2014.

Yan M, Gingras MC, Dunlop EA, Nouët Y, Dupuy F, **Jalali Z**, Possik E, Coull BJ, Kharitidi D, Dydensborg AB, Faubert B, Kamps M, Sabourin S, Preston RS, Davies DM, Roughead T, Chotard L, van Steensel MA Jones R, Tee AR, Pause A. The tumor suppressor Folliculin regulates AMPK-dependent metabolic transformation. *J Clin Invest*. 2014.

*co-first Author

Population studies:

Jalali N, Khalili P, Bahrapour S, Mahmoudabadi M, Esmaeili Nadimi A, **Jalali Z**. Cross-sectional study of passive opiate smoking in relation to stroke and some of stroke attributable risk factors in women. *Scientific Reports*. 2022 Sep 30;12(1):16367.

Jamali, Z., Ayoobi, F., **Jalali, Z.**, Bidaki, R., Lotfi, M. A., Esmaeili-Nadimi, A., & Khalili, P. (2024). Metabolic syndrome: a population-based study of prevalence and risk factors. *Scientific Reports*, 14(1), 3987.

Sardari F, Sharifi Z, Sedigh SS, Khalili P, Jamali Z, Ayoobi F, Esmaeili-nadimi A, Kamalabadi YM, Sadeghi T, **Jalali Z**, Shamsizadeh A. The profile of Oral Health Branch of Rafsanjan Cohort Study (OHBRCs) in Rafsanjan City, southeast of Iran. *Preventive Medicine Reports*. 2023 Dec 1;36:102513.

Sadeghi T, Soltani N, Jamali Z, Ayoobi F, Khalili P, Shamsizadeh A, Nasirzadeh M, Esmaeili-Nadimi A, Vecchia CL, **Jalali Z**. The prevalence and associated factors of overweight/obesity and abdominal obesity in South-eastern of Iran: a cross-sectional study based on Rafsanjan cohort study. *BMC Public Health*. 2023 Dec;23(1):1-9.

Jalali N, Khalili P, Jamali Z, **Jalali Z**, Moghadam-Ahmadi A, Vakilian A, Ayoobi F. Sleep duration, hypnotic drug use, and risk factors: cross-sectional study. **Scientific Reports**. 2023 Mar 1;13(1):3459.

Jalali N, Firouzabadi MD, Mirshekar A, Khalili P, Ravangard AR, Ahmadi J, Askari PS, **Jalali Z**. Cross-sectional analysis of potential risk factors of the pineal gland calcification. **BMC Endocrine Disorders**. 2023 Feb 28;23(1):49.

Jalali Z*, Bahrampour S*, Khalili P, Khademalhosseini M, Esmaeili Nadimi A. Cohort-based analysis of paternal opioid use in relation to offspring's BMI and plasma lipid profile. **Scientific Reports**. 2021 May 4;11(1):9462. doi: 10.1038/s41598-021-88781-9. PMID: 33947903; PMCID: PMC8096835.

Jalali Z, Bahrampour S, Khalili P, Jalali N, Esmaeili Nadimi A, Sadeghi Tabandeh
Cohort-based analysis of maternal age at menarche in relation to young adult offspring anthropometric and metabolic parameters. **Clinical Endocrinology**. 10.1111/(ISSN)1365-2265

Hamid Hakimi, Jafar Ahmadi, Alireza Vakilian, Ahmad Jamalizadeh, Zahra Kamyab, Mahya Mehran, Reza Malekzadeh, Hossein Poustchi, Sareh Eghtesad, Farimah Sardari, Mohammad Reza Soleimani, Morteza khademalhosseini, Movahedeh Mohammadi, Tabandeh Sadeghi, Fatemeh Ayoobi, Mitra Abbasi, Maryam Mohamadi, **Zahra Jalali**, Ali Shamsizadeh, Ali Esmaeili-Nadimi. "The profile of Rafsanjan Cohort Study." **European Journal of Epidemiology** 36 (2020): 243-252.

PRESENTED AND PUBLISHED ABSTRACTS IN CONGRESSES:

Jalali Z, Possik E, Nouët Y, Yan M, Gingras M-C, Schmeisser K, Panaite L, Dupuy F, Kharitidi D, Chotard L, Jones RG, Hall DH, Pause A. Folliculin regulates ampk-dependent autophagy and metabolic stress survival. **Terry Fox Fifth Annual Scientific Meeting. Montreal, QC. 2014.**

Jalali Z, Nouët Y, Possik E, Yan M, Gingras M, Panaite L, Dupuy F, Chotard L, Jones RG, Hall DH, Pause A. Folliculin negatively regulates ampk-dependent autophagy and stress survival. **Fifth BHD Symposium and Second HLRCC Symposium, Paris, France. 2013.**

SKILLS

Cell culture

Molecular biology techniques for gene cloning and mutagenesis

RNAi techniques using siRNA transfection and lenti/retrovirus transduction

Real-time PCR, Western, and flow cytometry analysis

Recombinant protein expression, purification, and *in vitro* functional assays

Fluorescence compound and confocal microscopy

Co-immunoprecipitation of protein complexes and pull-down assays

Bio-ID technique to screen for protein-protein interactions

Gene mapping

Bioinformatic analysis of molecular evolution and cancer genomics data

Basic statistical analysis in population-based studies

Basic computer programming in R