

CURRICULUM VITAE

Zahra Jalali

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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

- Population-based studies in Prospective Rafsanjan Cohort Studies, part of PERSIAN
- Computational analysis of biological data on Molecular evolution and cancer genetic diversity
- Investigating parental risk factors for obesity, metabolic syndrome and liver dysfunction
- Study of metabolic effects of parental smoking and opioid consumption on offspring

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 *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

Chemical Biology Program Stipend Award, Biochemistry Department, McGill University 2014

Graduate Excellence Fellowship, Biochemistry Department, McGill University 2012-2015

Ranked 8th in Iran's national entrance exam for universities. 2003

PUBLICATIONS:

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

Jalali Z, Bahrapour 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

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, 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*, Bahrapour 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. *Sci Rep*. 2021 May 4;11(1):9462. doi: 10.1038/s41598-021-88781-9. PMID:
33947903; PMCID: PMC8096835.

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

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.

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

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

Mutational genotype analysis

Molecular biology techniques for gene cloning and mutagenesis

Genetic manipulations in human cells and *C. elegans*

RNAi techniques using siRNA transfection and lenti/retrovirus transduction

Isolation of RNA and qRT-PCR analysis

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

Fluorescence (confocal) microscopy

Co-Immunoprecipitation of protein complexes and pull down assays

Flow cytometry assay

Bio-ID technique to screen for protein-protein interactions

Gene mapping performed in Arabidopsis plants

Cancer genomics databases analysis

Basic computer programming