Zahra Azizi, Ph.D.

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EDUCATION&EXPERIENCE

2017-now	Tehran University of Medical Sciences, School of Advanced Technologies in Medicine, Molecular medicine group	Tehran
2015-2016	Research Center for Molecular and Cellular Imaging, Imam Khomeini Hospital, Postdoctoral researcher	Tehran
2010-2015	University of Bremen (Centre of Biomolecular interaction, Islet lab) Universitätsklinikum Hamburg-Eppendorf (Gene and cell therapy) Universty of Utah (InsuGen L.cc Company) Ph.D in Naturewissenschaften, Molecular medicine	Bremen Hamburg Salt lake city
2010	Courses of Molecular Biology at **ZMNH** (Zentrum für Molekulare Neurobiologie Hamburg)	Hamburg
2008-2010	Researcher in Imam hospital, Imaging center Nude mice &GFP laboratory	Tehran
2006-2009	University of Tehran, Department of biology M.Sc. in Developmental biology	Tehran
2001-2005	Shahid Beheshti University, Department of biological sciences, B.Sc. in Zoology	Tehran

Awards

1. Getting the 3rd award of Tehran's high schools competition for the article" Epilepsy and the kinds of treatment", Iran 1997
2. Ranked 4th in the Nationwide Entrance Examination (M.Sc.), Iran 2006
3. Ranked 21th in the Nationwide Entrance Examination (M.Sc.) among up to 5400 volunteers in the field of medical physiology, Iran 2006
4. Elected in the program of molecular biology at ZMNH (Zentrum für Molekulare
5. Neurobiologie Hamburg), Hamburg, Germany 2010
6. Young scientist at ۲nd DZD Diabetes Research School, Vienna, Austria 2014
7. Travel fellowship award, European association for the study of Diabetes 2014

۸. جایزه شهید کاظم اشتیانی ۲۰۱۷

Publications

- Ting Yuan*, Sahar Rafizadeh*, **Zahra Azizi***, Kanaka Durga Devi Gorrepati, Sushil Awal, Jose Oberholzer, Kathrin Maedler & Amin Ardestani. Pro-proliferative and anti-apoptotic action of exogenously introduced YAP in pancreatic β-cells. **Journal of Clinical Investigation insight**, 2016

*Shared first authors

- A.Aminian, B.Shirzadi, **Z.Azizi**, K.Maedler, L.Treccani and K.Rezwan .Enhanced cell adhesion on bioinert ceramics mediated by the osteogenic cell membrane enzyme alkaline phosphatase, **Materials Science and Engineering C,** 2016

- **Zahra Azizi***, Claudia Lange, Federico Paroni, Amin Ardestani, Anke Meyer, Yonghua Wu, Julie Kerr-Conte, Francois Pattou, Axel R. Zander, Christof Westenfelder,* and Kathrin Maedler*. β-MSCs: successful fusion of MSCs with beta cells results in a beta cell like phenotype. **Oncotarget**, 2016

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- Anke Meyer, Katharina Stolz, Wolfgang Dreher,Jennifer Bergemann,Vani Holebasavanahalli Thimmashetty, Navina Lueschen, **Zahra Azizi**,Vrushali Khobragade, Kathrin Maedler and Ekkehard Kuestermann: Manganese mediated magnetic resonance imaging signals correlate with functional β-cell mass during diabetes progression.***Diabetes***,2015

- Amir Norouzy, **Zahra Azizi**, and Werner M. Nau*. Indicator Displacement Assays inside Live Cells. ***Angewandte Chemie International Edition***, 2015

- Ardestani. A, Paroni.F*, **Azizi.Z***, Kaur.S*, Khobragade.V,Yuan. Frogne.T. Tao.W. Oberholzer,J. Pattou,F.Kerr-Conte,J. Maedler,K: MST1 is a key regulator of beta cell apoptosis and dysfunction in diabetes. ***Nature Medicine***, 2014

*These authors contributed equally to this work

- S. Rafizadeh, T. Yuan, **Z. Azizi**, K. Gorrepati, S. Awal, J. Oberholzer, K. Maedler, A. Ardestani: Pro-proliferative and anti-apoptotic action of exogenously introduced YAP in pancreatic beta cells. ***52th EASD***,2016

- **Zahra Azizi**, Claudia Lange, Amin Ardestani, Federico Paroni, Christof Westenfelder, Axel Zander and Kathrin Maedler: Functional β-MSCs: successful fusion of MSCs with β-cells results in a β-cell like phenotype.***12th Islet workshop***, 2015

- **Zahra Azizi**, Claudia Lange, Amin Ardestani ,Federico Paroni, Christof Westenfelder, Axel Zander and Kathrin Maedler: Characterization of β-MSC Insulin producing cells generated by fusion of mesenchymal stromal cells with β-cells. ***5th International Congress on Stem Cells and Tissue Formation***, 2014

- **Zahra Azizi**, Federico Paroni, Claudia Lange, Christof Westenfelder, Axel R Zander and Kathrin Maedler: Functional β-MSCs: successful fusion of MSCs with β-cells results in a β-cell like phenotype. ***50th EMBO | 40th EMBL Symposium: Translating Diabetes***, 2014

- **Z,Azizi**, F, Paroni. C, Lange. AR, Zander. C, Westenfelder. K, Maedler: Highly-efficient MSCs fusion with beta cells results in beta cell like phenotype.***50th EASD***,2014

- **Zahra Azizi**, Claudia Lange, Amin Ardestani ,Federico Paroni , Christof Westenfelder, Axel R Zander and Kathrin Maedler :Characterization of β-MSC Insulin producing cells generated by fusion of mesenchymal stromal cells with β-cells, ***5th International Congress on Stem cells and Tissue Formation***,2014

- Amir Norouzy, **Zahra Azizi**, Werner M. Nau: Host-guest Reporter Pairs with 'Turn-on' Fluorescence Response to Monitor the Uptake of Cationic Analytes into Live Cells***. International symposium of the German society for Biochemistry and Molecular Biology (GBM)***, 2013

- **Azizi, Z.** Goudarzi, E .Zenali, B:The effect of lithium as a GSK-3β inhibitor in the formation of corpus luteum in Wistar rat, ***15th Iranian&3rd International conference of biology***,2008

- Goudarzi,E. **Azizi,Z**.Zenali,B:The effect of lithium as a GSK-3β inhibitor in the formation of graafian follicle in Wistar rat, ***15th Iranian&3rd International conference of biology***, 2008

- **Azizi,Z**. Hosein,Gh. Zeinali,B: The Effects of Lithium Chloride on Survival of corpus luteum in Wistar rat,***1st Biology conference for Iranian scholars in Europe***; 2008

Workshops

- Self and Time Management.Marum,Bremen,2014

- Leadership Skills, MPI Bremen,2014

- High-end Microscopy workshop, Jacobs University Bremen, Bremen,2014

- 50th EMBO | 40th EMBL Symposium: Translating Diabetes, Heidelberg,2014

- Kidney capsule transplantation,Dresden,2014

- 11th German Islet work,Dresden,2013

- Acrobat&10th German Islet workshop, Freiburg ,2011

Methods& Techniques

- **Human:**

Isolation of pancreatic Islets (hand picking), Mesenchymal stromal cells (MSCs) and isolation of Peripheral Blood Mononuclear Cell (PBMCs)

- **Animal handling (Wistar rat, GFP transgenic rat, C57/BL6 mouse, Balb/C mouse, Nude mouse, Balb/c mouse, MST-1 knockout129/sv mouse, SCID/Bg mice):**

Implant (Nude mice), subcutaneous injection (Nude mice), Peritoneum injection (Wistar rat), induction breast cancer (Nude mice), Isolation Sciatic nerve (Wistar rat), eye bleeding (c57 mouse), Intraperitoneal insulin tolerance test (IPTT), Intraperitoneal

glucose tolerance test (IPGT)(BL6 mice, MST-1 knockout mice), Isolation primary cells (Astrocyte cells & Schwann cells) (Newborn Wistar rat), Isolation pancreatic Islets (Balb/C), purification (Ficoll, Percoll, Histopaq),measurement of blood glucose, Insulin injection, low dose-STZ (T1D model) and high-fat diet (T2D model) (MST-1 -/- 129/sv mouse),Kidney capsule transplantation ,Hypothalamus isolation, Isolation of mouse Mesenchymal stromal cells (Balb/C)

Histological techniques

Fixation (Bouin, PFA, FA, Acetone, Methanol, Ethanol, OCT), embedding (Paraffin, Frozen) sectioning (paraffin), Histological tissue staining (H&E), Immunohistochemistry (DAB, IF), RNA&DNA Fluorescent in situ hybridization (FISH)

Cell biology methods

- **Primary culture**:

Shwann cells, Human and Mouse Mesenchymal Stromal Cells (adherent), Human and mouse pancreatic islets, Human Peripheral Blood Mononuclear Cells (suspension), migration/invasion assay

- **Cell line**:

Breast Cancer Cell line: BT-474 (colony, adherent), SK-BR-3 (adherent)/ Pancreatic cell line: MIN6 (mouse cell line, colony, adherent), INS1 (Rat cell line, adherent), CM (human, adherent). Virus producing cell line: T293 AD andT293 cell line, Chinese hamster ovary cell line: CHO (adherent) and Chinese hamster fibroblast cells: V79 (adherent)

- **Cell separating:**

Magnetic-activated cell separation (MACS), Fluorescence-Activated Cell Sorter (FACS): double staining FACS (FACS Aria), polyploidy FACS, PI FACS (LSRFortessa), DAPI FACS (LSRFortessa)

Pellet embedding, cell linker membrane marker staining (PKH-26) for living cell, Cell fusion (chemical method), Selecting cells with HAT method

- **Programs:**

SPSS analyzing program, Excel, INSTAT, Cyflogic, BD FACSDiva, VNTI (Invitrogen), Image J , NIS-Elements software (Nikon)/ ZEN2011black edition (Zeiss) and some other programs

- **Microscope techniques:**

Beta and alpha cell mass, Confocal microscopy, 3D pictures with Z-stack, microinjection

- **Molecular biology methods:**

Transfection (siRNA, shRNA, overexpression), Amplification of plasmids, Design a primer with NCBI and VNTI software, RNA extraction (Trizol, kit), Agarose gel electrophoresis, PCR, Real time (absolute and relative quantitative PCR),Protein extraction & purification, One dimensional SDS gel electrophoresis of proteins, Western blotting (wet transfer membrane method), Immune blotting and immune detection (ECL kit),Transfect Super paramagnetic nanoparticles (SPIO), Prussian Blue staining, Immunocytochemistry (IF), TUNEL (apoptosis assay),Enzyme-linked immunosorbent assay (ELISA), Glucose Stimulated Insulin Secretion Assay (GSIS)

- **Virology methods:**

Producing Lentivirus and Adenovirus, infecting cell lines (T293, T293AD, INS1, CM) and primary cells (MSCs), making stable cell line

Funding

- ردیابی سلول های مزانشیمی بیان کننده GFP از طریق نشان دار شدن با ذرات آهن،بنیاد ملی نخبگان (۱۳۹۴-۱۳۹۵)
- ارزیابی پیش بینی قابلیت ردیابی سلول های بنیادی مزانشیمی نشان دار شده با نانو ذرات مغناطیسی اکسید آهن در درمان سرطان، انستیتو کنسر (۱۳۹۴-۱۳۹۵)
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- بررسی نقش رتینوئیک اسید همراه با همجوشی(fusion) در تمایز سلول هایβ-MSCs به سلول های تولید کننده انسولین(۱۳۹۶-۱۳۹۷)
-

- بررسی بیان Meis2 و Bcl11a به عنوان فاکتورهای نوظهور درجهت تولید سلول های بتا به منظور درمان بیماران دیابتی(۱۳۹۶-۱۳۹۷)

دانشجویان

۹۶-۹۷

۱. امکان سنجی طراحی اندام بر روی تراشه، اقای مهدی کشتیبان، دانشجوی ارشد، دانشکده مکانیک دانشگاه تهران، استاد **مشاور**

۲. بررسی اثر conditioned medium سلول های دودمان میلوئیدی در تمایز سلول های β-MSCs به سلول های تولید کننده انسولین ، خانم فائزه شاهدی، دانشجوی ارشد، دانشکده فناوری های نوین پزشکی، گروه بیوتکنولوژی پزشکی ، استاد **راهنمای** دوم

۳. بررسی آپوپتوز سلولی در سلولهای سرطانی سرویکس با استفاده از طراحی سیستم CRIAPR/Cas9علیه ویروس ، HPV، خانم زهرا نوروزی، دانشجوی دکتری، دانشکده فناوری های نوین پزشکی، گروه پزشکی مولکولی، استاد **راهنمای** سوم

٤. نقش RNAهای بلند غیرکد کننده جدا شده از اگزوزوم های مترشحه از سلولهای سرطان کولورکتال در ایجاد مقاومت دارویی به 5-FU و اگزالی پلاتین، خانم رکسانا صاحب نسق، دانشجوی دکتری، دانشکده فناوری های نوین پزشکی، گروه پزشکی مولکولی، استاد **راهنمای** دوم

٥. طراحی و بررسی کارایی نانوساختارهای ZnO به منظور بدام انداختن سلولهای توموری در حال گردش، آقای سید محمد امین مهدیان، دانشجوی دکتری، دانشکده داروسازی، گروه نانو فناوری های دارویی، استاد **راهنمای** دوم

٦. ژن درمانی در شرایط invivo با استفاده از سلول در برگیرنده(Ensheathing)بویایی انسان حاوی ژن تیمیدین کیناز در تومور گلیوبلاستوما مولتی فرم، خانم فاطمه تیرگر، دانشکده فناوری های نوین پزشکی، گروه نوروساینس، استاد **مشاور**

۹۵-۹٦

۷. اثرات دگزامتازون بر تمایز سلول های بنیادی مزانشیمی مغز استخوان به سلول های آندودرم قطعی، دانشگاه تهران، دانشکده زیست شناسی، گروه تکوینی جانوری، استاد مشاور (پایان یافته)