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## Novel mechanisms and signaling pathways in angiogenesis

Forghany, Z.

### Citation

Forghany, Z. (2024, December 18). *Novel mechanisms and signaling pathways in angiogenesis*. Retrieved from <https://hdl.handle.net/1887/4172661>

Version: Publisher's Version

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**Note:** To cite this publication please use the final published version (if applicable).

## LIST OF ABBREVIATION

AMC	Amido-4-methylcoumarin
AP-1	Activator protein 1
CAPNS1	Calcium-activated neutral proteinase 1
CHX	Cycloheximide
CHIP	Chromatin Immunoprecipitation
DBD	DNA binding domain
DLL	Delta-Like DLL Delta-Like
DLL1	Delta-Like 1 (Notch ligand)
DLL4	Delta-Like 4 (Notch ligand)
INTRA	Intracellular domain of DLL4
IMDM	Iscove's Modified Dulbecco's Medium
ECs	Endothelial cells
EDBD	ETS DNA binding domain
EGFP	Enhanced Green Fluorescent Protein
EGF	Epidermal growth factor
ETS	E26 Transformation-Specific
FOS	Proto-oncogene FOS
GFP	Green fluorescent protein
hiPSC-CM	Human iPSC-derived cardiomyocytes
HUVEC	Human umbilical vein endothelial cell
HTS	High Throughput Screen
ICD	Intracellular domain
IDR	Intrinsically disordered region
JAG	Jagged
JAK	Janus kinase
MAPK	Mitogen-Activated Protein Kinase
MMP	Matrix metalloproteinase
MNNL	Module N-terminus of Notch Ligands
NICD	Notch intracellular domain
NECD	Notch extracellular domain
NMR	Nuclear Magnetic Resonance
NSCLC	Non-small cell lung cancer
PLA	Proximity Ligation Assay
PECAM-1	Platelet endothelial cell adhesion molecule-1
qPCR	Quantitative PCR
RTK	Receptor tyrosine kinase / Matrix metalloproteinase\
shRNA	Short hairpin RNA
siRNA	Small interfering RNA
SRPR	Signal recognition particle receptor
TAD	Transactivation domain

TBP TATA binding protein  
TINS Targeted Immobilization NMR Screening  
Tg(fli1) Transgenic zebrafish expressing GFP under the fli1 promoter  
TGF $\beta$  Transforming growth factor  $\beta$   
TINS Targeted Immobilization NMR Screening  
TME Tumor microenvironment  
TPA Tetradecanoylphorbol-13-acetate  
UIPD Ubiquitin-independent proteasomal degradation  
VEGF Vascular endothelial growth factor  
VEGFR Vascular Endothelial Growth Factor Receptor

## PUBLICATIONS

- A new model of Notch signaling: Control of Notch receptor cis-inhibition via Notch ligand dimers; **Zary Forghany\***, Daipeng Chen\*, Xinxin Liu, Roeland M.H. Merks, David A. Baker; PLoS Comput Biol 19, Jan 2023: e1010169; doi: <https://doi.org/10.1371/journal.pcbi.1010169>.
- Control of endothelial cell tube formation by Notch ligand intracellular domain interactions with activator protein 1 (AP-1); **Zary Forghany\***, Francesca Robertson\*, Alicia Lundby, Jesper V. Olsen, David A. Baker; J Biol Chem Jan 2018 1;293(4):1229-1242; <https://doi.org/10.1074/jbc.M117.819045>.
- Functional analyses of a human vascular tumor FOS variant identify a novel degradation mechanism and a link to tumorigenesis; **Zary Forghany\***, David G.P van Ijzendoorn\*, Frauke Liebelt, Alfred C. Vertegaal, Aart G. Jochemsen, Judith V.M.G Bovée, Karoly Szuhai, David A. Baker; J Biol Chem Nov 2017 292(52):21282-21290; doi: analyzing samples
- Identification of Novel Small Molecule Inhibitors of ETS Transcription Factors by Disrupting Protein: DNA Interactions; **Zary Forghany**, Shaima Abdalla , Xinxin Liu, David A. Baker ( Under preparation 2025)

## OTHER PUBLICATIONS

- Gene regulatory network model identification using artificial bee colony and swarm intelligence; **Zary Forghany**, Mohsen Davarynejad, B. Ewa Snaar-Jagalska, 2012 IEEE Congress on Evolutionary Computation; doi: <https://doi.org/10.1109/CEC.2012.6256461>.
- Mass-Dispersed Gravitational Search Algorithm for Gene Regulatory Network Model Parameter Identification; Mohsen Davarynejad, **Zary Forghany**, Jan van Den Berg; 2012 Lecture Notes in Computer Science; doi: [https://doi.org/10.1007/978-3-642-34859-4\\_7](https://doi.org/10.1007/978-3-642-34859-4_7).
- Characterization and expression analysis of two novel zebrafish P38 isoforms; Hanan Rian, **Zary Forghany**, S. Krens, Herman Spaink, E. Snaar-Jagalska Published 2014 Biology Corpus ID: 215752152
- Predicting the Impact of Supplemental Phytase, Wheat and Phosphorus on the Performance of Laying Hen; **Zary Forghany**, Leila Zartash, Mohsen Davarynejad; World Congress on Computers in Agriculture and Natural Resources –2009, Michigan, US

## ACKNOWLEDGMENT

Despite the numerous challenges I have faced in my life, I remained motivated to continue, progressing slowly but steadily, and ultimately completing this significant chapter of my life. This achievement would not have been possible without the support and encouragement of those around me.

David, from the moment I began my master's internship in your lab, I had the opportunity to experience real science alongside you. You were always open to my questions and encouraged me to explore new avenues. I appreciate your enormous knowledge; you taught me how to be brave, dive into unknown fields, and find confidence. I am sincerely grateful.

I want to express my deepest gratitude to my promoter, Peter, for your exceptional guidance and unwavering support. Your advice has been invaluable, not only in the scientific aspects of this work but also in providing emotional encouragement throughout this journey. Your mentorship has contributed significantly to my personal and academic growth, and I am genuinely thankful for that.

To my dear friends Eka, Matty, Amina, Maaike, Joost, Karo, Ivo, Igno, Chen, Jin, Sija, Francesca, Sumit, Roman, Gelila, Catalina, Jing, Thilo—with you, I felt at home in the CCB department at LUMC. Julia, many thanks for being there for educational help, wise advice, and being such a good listener. Willem, Joop, Hans, and Annelies, thank you for your technical support in the facilities.

Thanks to all the students I had the privilege of supervising—Helen, Miguel, Yana, Siger, Sten, Camiel, Dieuwke. Working with each of you has been a rewarding experience. Manuel and Harald, thank you for adding valuable discussions to my PhD evaluation. How lucky I am to deserve your friendship, Kseniya and Frauke. I'm happy to celebrate years of friendship with you, while you continue supporting me as my paranymphs in this memorable ceremony. Maarten, thanks for helping me with the Dutch translation. I would like to acknowledge all the members of the CCB department—Alfred, AG, Karoly, Lenard, Pauline—and everyone whose names I cannot fit into this acknowledgment.

A huge thanks to my best friends outside of LUMC, Vincenzo, for all the discussion time and brainstorming; Fatemeh, for your unconditional help and great friendship; Leila, for all the incredible thoughts. Reza and Shiva, thank you for incredible help and support even till the last minute. Hamidreza, thank you for always being enthusiastic and happy to answer my questions. Sara, Shima, Behroz—without your help, I couldn't have faced so many problems during the pandemic. Zahra, Maryam, Fariba, Samaneh, Zeinab, Hanieh, Sobhan, Ehsan, Nazi, Simin, Vahideh, and Azadeh— thanks for being present whenever was needed outside the lab. Helma, I always remember your generous offer to take

care of Manelie when I had to meet my deadlines. Thanks to Robert, Marlindeh, and Henk for all the great thoughts and brainstorming.

I want to say a heartfelt thank you to my dad and my little angel Nazanin, who were both so excited to celebrate the end of my PhD with me. Although that day never came, I know they are watching over me now, and I received your spiritual support whenever I needed it. I always regret not spending enough time with you until it was too late. You are in my heart forever. Mom, you were always there encouraging me through this difficult time. Thank you a thousand times for your genuine interest in every task I have ever undertaken since birth. My dearest sister, you are my big hero. I've never seen a person with your patience, Soroor and Mohammad, you are a significant lesson for me for the rest of my life.

Huge thanks to Baba Hossein and Maman Talat, I am happy to have you on board. Whenever the whole family was stressed, you came to the Netherlands to help us. Thank you for understanding and encouraging us to stay faithful to our destiny. I wish you could stand next to me when I receive my doctoral diploma. Thanks to all members of my fabulous family, especially Danial, Yasaman, Soodeh, and Malihe, for your emotional support.

To Mikael, the treasure of my life, who spent 9 months in the lab with me during my pregnancy—you were with me through it all. Despite the many challenges we faced, your love gave me the strength to keep going. And to Manelie, my little princess, you bring true meaning to my life. You arrived during one of the most chaotic times in the world, the pandemic, and while it may have been hard on you, I couldn't have made it through without you.

And finally, my beloved Mohsen! Thank you for your true love, for always being there, sharing in my happiness, and standing by me through every challenge, both the tears and the triumphs. I will never forget your unconditional love when I felt disappointed and depressed, which happened often. You are the warmth and light of my life. Your support made this achievement possible.

## **CURRICULUM VITAE**

Zary Forghany was born on May 4th, 1983, in Tehran, Iran. She obtained her high school diploma cum laude with a specialization in Science. After completing her bachelor's degree in Animal Science (2008), she began working as a Research Assistant at a poultry supply chain company.

In 2010, Zary moved to Leiden to study Master in Molecular Biology at Leiden University, within the Institute of Biology Leiden (IBL) department. She had the opportunity to work with zebrafish under the supervision of Prof. Dr. Ewa Snaar-Jagalska. She performed her second internship in the laboratory of Dr. Baker at the Department of Molecular Cell Biology (LUMC), and upon completing that she earned her master's degree cum laude in 2013.

She continued her research on angiogenesis signaling as a PhD student under the supervision of Dr. Baker, focusing on novel mechanisms and signaling pathways in angiogenesis. In 2017, she worked in the same lab on a drug discovery project, in collaboration with the European Lead Factory and funded by Prof. Dr. Pancras Hogendoorn, aimed at identifying and validating novel small molecule inhibitors of ETS transcription factors. This ongoing project is one of the key focus of her thesis. Currently, she is involved as a researcher on the cultivated meat projects at DSM-Firmenich company, in Delft.