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Glycosylation signatures of type 2 diabetes complications and metabolic syndrome

Memarian, E.

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Curriculum Vitae

Elham Memarian was born in Tehran, Iran. After finishing her high school education at Zahraye-Athar High School, she enrolled in the bachelor of Applied Chemistry at the Faculty of Science at Payam-e-Noor University (PNU), Iran in 2008. During this time, she was awarded several diplomas and medals because of her inventions at international and national invention expositions and competitions including a Gold Medal and Diploma awards in Korea (2011) and a Silver Medal award in Romania (2010). Then, she started her masters' in Analytical Chemistry at the Department of Analytical Chemistry and Pollutants at Shahid Beheshti University (SBU), Iran, from 2013 to 2015. During this period, Elham gained an immense interest in analytical chemistry and how it can be beneficial in the clinics to improve human life. For her master's thesis, Elham developed and optimized solid phase microextraction and electromembrane extraction techniques to measure certain drugs and pollutants and she was able to publish her first two papers in *Analytica Chimica Acta* and *Electrophoresis*.

After completing her master's degree, in 2017 she embarked on her PhD journey as an early-stage researcher in the GLYSIGN Marie Skłodowska-Curie European Industrial Doctorate program at Leiden University Medical Center (LUMC) in the Netherlands. The GlySign program offered a unique dual engagement in both industry and academia, equipping her with invaluable experience. At Genos d.o.o. in Zagreb, Croatia, under the supervision of Prof. Gordan Lauc, she utilized ultra-performance liquid chromatography (UPLC) to study *N*-glycan patterns in patients with type 2 diabetes. She also explored the interaction between poor health status (SHS) and metabolic syndrome (MetS) through *N*-glycan profiling. At LUMC, she worked under the supervision of Prof. Manfred Wuhler and Dr. Viktoria Dotz at the Center for Proteomics and Metabolomics (CPM). There, she studied protein glycosylation and its links to complications in type 2 diabetes using mass spectrometry. Her significant contributions to the GLYSIGN consortium are compiled in this PhD thesis.

From August 2022 till July 2023, Elham worked as a Senior Analyst at CPM, LUMC, the Netherlands.

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suboptimal health status and metabolic syndrome in a Ghanaian population. *Biomarkers in medicine*. 2019 Oct;13(15):1273-87. (*Chapter 2*)

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از خانواده عزیزم برای محبت و مراقبت بی پایان شان در طول مسیر زندگیم صمیمانه سپاسگزارم. از صمیم قلبم بهترین ها را برای شما آرزو دارم. پدر و مادر عزیزم، مامان و بابا، اعتماد و حمایت بی دریغ شما همیشه چراغ راه زندگی من بوده و شادی ام را تضمین کرده است. محبت بی پایان شما را هرگز نمی توان جبران کرد. از صبر و شکیبایی شما در برابر سختی ها و ناراحتی هایی که ممکن است برای شما ایجاد کرده باشم، بی نهایت قدردانم. همه دستاوردهایم را مدیون عشق و فداکاری بی دریغ شما هستم. ایمان شما به من و حمایت بی وقفه تان در هر شرایطی، زندگی ام را به کلی دگرگون و زیبا ساخت. راهنمایی های ارزشمند و حمایت همیشگی تان را در تمام طول زندگی گرامی خواهم داشت. شما در روزهای سخت، امید را در دل من زنده کردید و به تلاش ها و موفقیت هایم با عشق و توجه واقعی تان معنا بخشیدید.

