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## Unraveling mucin type o-glycosylation signatures of colorectal cancer

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## **UNRAVELING MUCIN TYPE O-GLYCOSYLATION SIGNATURES OF COLORECTAL CANCER**

**Katarina Madunić**

1. Integration of multiple omics approaches is essential for understanding the mechanisms behind differential glycosylation in diseases. (*This thesis*)
2. Addition of different monosaccharides other than glucose into the colorectal cell culture media would increase the glycobiological and functional relevance of these *in vitro* models. (*This thesis*)
3. 2D cell line models are often criticized for their deficit in biological relevance in comparison to 3D multicellular models. However, simplification can also be an asset in mechanistic studies. (*This thesis*)
4. Further development in systems biology approaches is necessary to allow for a comprehensive analysis and integration with biosynthetic pathways. (*This thesis*)
5. Powerful glycoproteomics approaches and suitable 3D models are needed to determine whether the microheterogeneity of glycan structures matters at the functional level.
6. Expect the unexpected! It's the unlikely observations that present a perfect start for new projects.
7. Glycomics will make a strong impact in science and healthcare only once we design robust automated data analysis workflows.
8. Scientists would make swifter progress in solving the world's problems if they learned to put their egos aside and collaborate better (*Katalin Karikó, 2021*). University policies should stimulate and reward collaboration.

9. The possibility of publishing negative results would result in more groundbreaking discoveries.
10. Instead of chasing next publications to boost their careers, scientists should focus more on validating and translating promising results into the clinic.
11. Success consists of going from failure to failure without loss of enthusiasm (*Winston Churchill, 1941*). It is the basis of perseverance and resilience in research.
12. And at the end of the day, your feet should be dirty, your hair messy, and your eyes sparkling (*Shanti*). Even if you spend the whole day in the lab.