



Past, Present, and Future of Glycoscience: The Shift Has Started **The past decade started a paradigm shift in medical.**

The ultimate pathway to extend and move bio-markers of life and health is Glycomics.

Smart Sugars Lesson #101

by JC Spencer

Data gathering for the human glycome and genome during the past decade surpassed that of all previous generations. Man is, indeed, amassing greater knowledge than anytime in history. Universities world-wide are making astounding glycomic discoveries that will forever alter the medical direction.

The past decade of glycomics started as a continuation of the previous decade of ridicule and disbelief of any possible health benefits from plant polysaccharides taken orally. Papers were published about how glycosylation did not result from the consumption of Smart Sugars.

Those papers were refuted by a team of researchers in England lead by Dr. John Axford when a paper was published in the European Journal of Clinical Nutrition dealing with proven glycosylation of human cells caused by plant-derived polysaccharides. The in-vitro and in-vivo studies suggested that the saccharide biopolymers can have bifidogenic and or immunomodulatory effect that impact cellular glycosylation.

By the close of 2012 leading U.S. Government agencies had assembled a stellar group of glycoscientists who formed a committee to develop the roadmap for the future of glycomics. The project title was "Transforming Glycoscience". Glycosylation is now recognized paramount to medical research by NIH, FDA, NSF, the National Academy of Sciences, and the National Research Council.

It is easier to gather data than ever before because of advanced technologies. But, data in a vacuum isn't all that useful. It is reported that Steve Jobs spend \$100,000 to gather his personal gene data. In this current decade, we

will learn what to do with some of the data. The speed of gathering data is faster than ever before. And, the storage cost has moved from \$1 million/Tb to less than \$50 today. Speed of processing has moved from MHz to Pflops which takes computer mining to a whole new level.

The genome is believed to contain only 30% of the health biomarkers while the glycome may contain the other 70%. Much research is needed and this fact will forever change medical.

Universities are pursuing glycomic research at an all time high and disseminating their new found knowledge. As new discoveries of the glycans emerge we will learn better how they interact with antibodies, proteins, viruses, bacteria and how they relate to human health. Glycoscience holds the key to help us define and understand the molecular qualities of biological interactions.

The Endowment for Medical Research for the past decade has collaborated with universities and research labs in six countries. We are postured to advance this collaboration by helping develop a new standard in Glycoscience diagnostics with a unified platform of various technologies that provide verification of location and movement of the biomarkers of aging and health with the ability to extend those biomarkers.

Source:
[http://www.genomeweb.com/arrays/emory-wins-55m-launch-functional-glycomics-center?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+genomeweb+\(GenomeWeb+%C3%9Cberfeed\)](http://www.genomeweb.com/arrays/emory-wins-55m-launch-functional-glycomics-center?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+genomeweb+(GenomeWeb+%C3%9Cberfeed))

<http://www.ncbi.nlm.nih.gov/pubmed/21224866>
www.GlycoscienceNEWS.com

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<http://www.endowmentmed.org/content/view/826/106/>

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<http://www.endowmentmed.org/pdf/SmartLesson101.pdf>

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