Glycan Age Prediction Model

Tech ID: 34842 / UC Case 2022-523-0

ABSTRACT

Researchers at the University of California, Davis, have developed a model to estimate biological and chronological age from blood serum samples.

FULL DESCRIPTION

Alterations in the human glycome have been associated with cancer and autoimmunity. Thus, constructing a site-specific map of the human glycome for biomarker research and discovery has been a highly sought-after objective. However, due to analytical barriers, comprehensive site-specific glycoprofiling is difficult to perform.

Researchers at the University of California, Davis have developed a platform to detect easily quantifiable, site-specific, disease-associated glycan alterations for clinical applications by adapting the Multiple Reaction Monitoring (MRM) Mass Spectrometry (MS) method for use in glycan biomarker research. The adaptations allow for highly precise site-specific glycan monitoring with minimum sample preparation. MRM MS was employed to construct a detailed, site-specific structural map of the human plasma glycome of healthy individuals and to characterize the glycans' inter- and intra-molecular correlations. Glycan alterations associated with age and gender (common covariants in biomarker research and discovery) were also identified and multi-analyte classifiers capable of predicting age were constructed and validated.

APPLICATIONS

- Glycan biomarker research and discovery.
- Development of novel glycan-altering therapeutics.

FEATURES/BENEFITS

- Characterize the human glycome in a rapid and reproducible fashion.
- Detects quantifiable, site-specific, disease-associated glycan alterations more efficiently than previous glycan age prediction models.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Published Application	20240402187	12/05/2024	2022-523

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Prebiotic Oligosaccharides
- Diagnosis and Treatment of Inflammatory Disease by Glycan Profiling of High Density Lipoprotein (HDL)

CONTACT

Prabakaran Soundararajan
psoundararajan@ucdavis.edu
tel: .

INVENTORS

- Lebrilla, Carlito B.
- Maverakis, Emanual
- Merleev, Alexander

OTHER INFORMATION

KEYWORDS

glycan, age, prediction, serum, plasma

CATEGORIZED AS

- **Medical**
  - Diagnostics

RELATED CASES

2022-523-0

- Additional Glycosyl Hydrolase is Critical to Bacteria’s Ability to Consume HMOs
- Glycoprotein Cleaving Enzyme Isolated from Bifidobacteria

University of California, Davis
Technology Transfer Office
1 Shields Avenue, Mrak Hall 4th Floor,
Davis,CA 95616

Tel:
530.754.8649
techtransfer@ucdavis.edu
https://research.ucdavis.edu/technology-transfer/
Fax:
530.754.7620