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Application of focused metabolomics to cancer risk screening

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Abstract

Focused metabolomics involves the measurement and analysis of a defined set of meta bolites in order to gain information about the state of an organism. Amino Acids serve as a convenient metabolic subset as they can be easily and reliably measured and there is plentiful background data. We have shown that plasma amino acid concentration data can be used to construct indices that can distinguish various physiological and disease states. Based on such findings, we have developed a system to generate amino acid based indices that can separate two physiological states or act as linear fit functions for difficult to measure parameters. As the first step in commercialization, we have developed AminoIndex® Cancer Screening (AICS) that can assess the disease risk for several types of cancers for an individual and AICS has been adopted by over 300 hospitals and clinics in Japan as an option in their health check menus. The AminoIndex® concept has also been applied to other diseases and physiological states and we believe that this can be used as a platform for biomarker development for personalized nutrition and medicine in the near future.

Biography

Takeshi Kimura studied Cell and Molecular Biology at University of London, King's College and obtained a PhD in Biochemistry from University of London. He then went to the NIH in the USA. After joining Ajinomoto in 1989, he has lead research groups, served as head of the Washington DC Office and became General Manager of Quality Assurance and External Scientific Affairs Department in 2005. He became Corporate Executive Officer in 2009. Since 2010, he is General Manager of R&D Planning Department. He has publications is journals such as Nature, J. Mol. Biol., Am. J. Clin. Nutrition., J. Nutrition.