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Japan's Shimadzu announces development of new technology to improve healthy life expectancy

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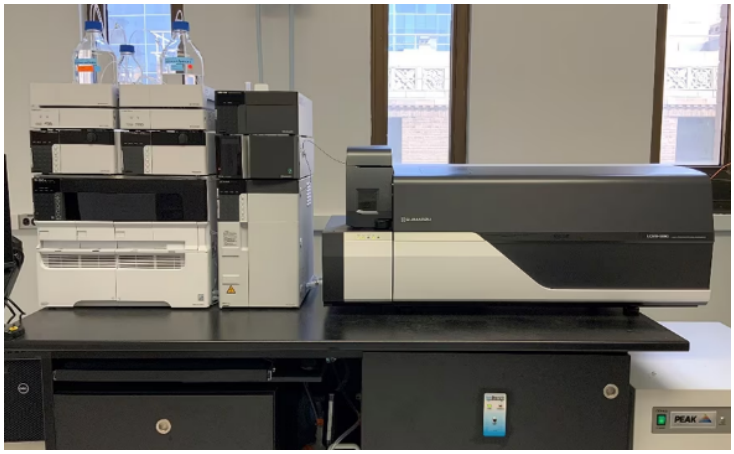
For the development of anti-ageing therapies and treatment of ageing-related diseases



Japan-based Shimadzu Corporation and Shimadzu Scientific Instruments (SSI) have announced the development of an innovative technology- double isotope-mediated liquid chromatography-tandem mass spectrometry (dimeLC-MS/MS) that holds the potential to further advance ageing research and extend healthy life expectancy.

SSI is collaborating with Shin-ichiro Imai, MD, PhD, the Theodore and Bertha Bryan Distinguished Professor in Environmental Medicine and a professor in the Department of Developmental Biology at Washington University School of Medicine in St. Louis, Missouri, in developing the technology.

US-based Washington University entered into a joint research agreement with SSI in 2021 to apply mass spectrometry technology toward the development of tools to quantitate nicotinamide mononucleotide (NMN) and related compounds in biological samples.

This technology combines a novel metabolite extraction method with stable isotope compounds made by Alsachim, a Shimadzu Group Company, enabling precise quantification of NMN in biological samples. Utilizing two different stable isotopes not only accurately quantifies NMN but also detects errors in the extraction process simultaneously. Shimadzu Corporation's LCMS-8060 triple quadrupole mass spectrometer played a pivotal role in this joint research.

Compared to traditional organic solvent-based metabolite extraction methods, this technological advancement offers rapid and accurate NMN quantification. Its applications span a wide range, from the development of anti-ageing therapies to the treatment of ageing-related diseases and advancing ageing research in general.