

Life Sciences | Medicine | Technology Offer

Determining a person's biological age, using a sophisticated set of biomarkers

Field of application

Numerous, partly unknown factors influence the human aging process. The chronological age is therefore not necessarily the same as the biological age, which is an artificial value reflecting age-related change in body function or composition. However, the biological age plays a significant role when it comes to the treatment of age-related diseases. It allows high-risk patients to be identified, diagnosed and treated at an early stage.

State of the art

Current methods for determining a person's biological age are usually limited to clinical chemistry or individual molecular parameters. A limited number of individual parameters have already been tested in several studies. However, the individual assessment of parameters did not allow a precise assessment of biological age. A plausible reason for this is the intrinsic multi-causal and multi-system nature of the aging process.

Innovation

The inventive method for determining the biological age is based on a study conducted by a group of inventors from the University of Konstanz – in collaboration with 26 other research groups across Europe. Around 3,300 subjects from the general population in eight European countries participated in the study.

It focused on biomarkers, whose correlation with cell and tissue aging is known, as well as on state-of-the-art and novel, mechanistic ones. Samples of blood, plasma, serum and urine from subjects aged 35 to 74 years were analyzed.

Around 300 biomarkers were analyzed for each participant. The vast amount of the data generated was validated using modern bioinformatics techniques. This way it was possible to identify 30 biomarkers showing a strong correlation with the aging process. After allocating weighting factors to the biomarkers, a gender-specific, valid subset of 10 biomarkers (of blood, plasma and serum) could be identified for the reliable determination of the biological age of women and men, including a formula for the calculation of the numerical value.

Patent portfolio

An EP application is pending.

Reference number: 13/016TLB

Your benefits at a glance

- ✓ Identification of a person's biological age
- ✓ Identification of the risk of age-related diseases affecting people of all age groups
- ✓ Independent from the person's motivation or physical presence as physiological parameters (such as cardiac function)
- ✓ Further inventive biomarkers can be added to the set of biomarkers at any time



Figure: Chronological and biological age is not necessarily the same. Now, it is possible to determine the biological age reliably.

Technology transfer

Technologie-Lizenz-Büro GmbH is responsible for the exploitation of this technology and assists companies in obtaining licenses.

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