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CALCISCON, AMSTERDAM UNIVERSITY MEDICAL CENTER and ADMESY to develop T50® test benchtop analyzer supported by EUROSTARS funding

January 11, 2023, SWITZERLAND and THE NETHERLANDS.

CALCISCON, AMSTERDAM UNIVERSITY MEDICAL CENTERS and ADMESY have signed a collaborative agreement for the development of a laboratory benchtop analyzer for the measurement of the T50 test. T50 is a unique test for the measurement of calcification propensity in a blood sample. The primary use of T50 is to revolutionize the treatment of patients suffering from chronic kidney disease, particularly dialysis patients, with the potential to significantly reduce their cardiovascular burden. The collaboration partners combine excellence in calcification in vitro diagnostics (Calciscon), in-depth know-how on optical detection systems (Admesy) and world-renown expertise in clinical chemistry and nephrology research (Amsterdam UMC). The CALPROTECT consortium is supported by €2M Eurostars funding.

The consortium will develop a T50 analyzer to allow clinical laboratories worldwide to easily measure calcification propensity (T50) in blood. T50 measures the formation velocity of nanometer-sized calciprotein particles (CPP), known to induce calcification, inflammation and oxidative stress. "***Having the availability of T50 testing in clinical practice will improve identifying those people treated by dialysis at highest risk, while its serial measurements makes it possible to personalise treatment and holds promise to improve their outcomes***", said **Prof. Dr. Marc Vervloet (Nephrologist at Amsterdam UMC)**. Admesy will develop a novel optical detection strategy for detection of the calcified nanoparticles. "***The challenges associated with creating a robust, reliable and economical detection system for the minuscule CPP fall exactly into our R&D stronghold in high-performance optical systems***" commented Jimmy van den Bergh (R&D Manager at Admesy). Calciscon will lead the integration of the technology into an IVD-grade analyzer, that will be tested in clinical settings at Amsterdam UMC. "***Our hospital clinical laboratory is uniquely suited to assess the performance of a device when used with patients at high risk for vascular calcification***", said **Dr. Henrike Hamer (Clinical Chemist at Amsterdam UMC)**.

Calciscon is preparing for the launch of T50 for use with chronic kidney disease patients, particularly dialysis patients through strategic partnerships in Europe, USA and the Far East. "***This exciting development project is instrumental for bringing T50 to treating physicians worldwide to improve patient care***" said Vincent Linder Ph.D. (CEO at Calciscon)

For further information please contact the project coordinator **vincent.linder@calciscon.com**

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About the T50 test

T50 is a unique blood test measuring calcification propensity, and best-in-class measurement for calcification-related cardiovascular risk, based on multiple clinical validations studies with more than 20,000 participants. Cardiovascular disease (CVD) is the leading cause of death worldwide, and the majority of kidney disease patients suffer and die of CVD. Vascular calcification is a key component of the progression of CVD, and it is controlled by nanometer-scale particles called calciprotein particles (CPP). The CPP constitute the natural mechanism to transport calcium and phosphate throughout the body, and most circulating CPP are found in their non-toxic form "CPP1".

A small quantity of CPP1 can transform into "CPP2", which are toxic, and responsible for calcification, inflammation, and oxidative stress. The T50 measures the time of formation of these toxic CPP2, which are believed to be one significant root cause for progression of kidney and cardiovascular diseases. In kidney disease patients,T50 test has been clinically validated to predict progression of calcification, and demonstrated to be the best predictor of cardiovascular disease, cardiovascular death and all-cause death. In the healthy population, T50 was shown to be a risk factor for CVD, independent of the Framingham risk factors. Excitingly, T50 can be used as a therapeutic target as it is amenable to improvement by already existing drugs.

About Calciscon

Calciscon was founded in 2013 as a result of a breakthrough research in kidney medicine by Prof. Dr. Andreas Pasch. He investigated the mechanisms leading to rapid calcification observed in the blood vessels, when using chronic kidney disease as a human clinical model for vascular inflammation and calcification. This work led to the development of the T50 Calcification Propensity test, the first in vitro blood test to assess the aging of the vascular system. T50 has in the past years been extensively validated in clinical studies as a predictor of cardiovascular outcome. Clinical use of T50 opens the possibility to improve guidance of interventions to slow down vascular damage. Furthermore, T50 is expected to contribute to improving healthspan in the normal population, and reduce cardiovascular morbidity and mortality in populations suffering of kidney and cardiovascular diseases.

About Amsterdam UMC

Amsterdam UMC is a leading medical center that combines complex high-quality patient care, innovative scientific research, and education of the next generation health care professionals. We believe that health care practice, research and education belong together, with each shaping and informing the other. Amsterdam UMC has arisen from the (administrative) merger of Amsterdam's two academic hospitals, the Academic Medical Center (AMC) and the VU University Medical Center (VUMC) in 2018. Amsterdam UMC represents the medical faculties of the two universities associated: the University of Amsterdam and the Vrije Universiteit Amsterdam. Clinical expertise and user-feedback in a clinical laboratory setting in this project is provided by the departments of clinical chemistry and nephrology of the Amsterdam UMC. Professor Vervloet, nephrologist, is a leading scientist in calcification research, co-founder of the ERA Working Group on CKD-MBD, and author of UpToDate (the worldwide most-used clinical knowledge resource) section on vascular calcification, and author of many peer-reviewed original research on vascular calcification.

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About Admesy

Admesy was founded in 2006 and is active in developing and manufacturing test and measurement systems for color, light and spectral based measurements. Starting in the challenging consumer electronics display market over the years our product range expanded from colorimeters into spectrometers, luminance meters and 2D imaging devices. We focus on high-speed, high-accuracy measurement solutions which can be integrated into production or test systems. Based on internal research, development and in-house manufacturing Admesy supports its customers from large volume manufacturing 24/7 production lines to smaller volume niche system manufacturers.

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