The expertise

UCL researchers have set up and validated an efficient process to stabilize and quantify the reaction product of hemoglobin and nitric oxide in erythrocytes in vivo. The paramagnetic α-HbNO complex is measured by Electron Paramagnetic Resonance (EPR) spectroscopy.

Measured α-HbNO levels were strongly correlated with endothelial function. The test was clinically validated in cohorts of healthy volunteers or patients with metabolic syndrome. Significant correlations of α-HbNO levels were established with traditional cardiovascular risk factors, such as the Body Mass Index, levels of glycated hemoglobin, non-HDL cholesterol or triglycerides.

Advantages & applications

✓ Direct measurement of the bioavailability of NO, the “guardian angel” of vascular homeostasis
✓ Direct and quantitative measurement of bioactive radicals
✓ Surrogate biomarker in interventional clinical studies to test efficacy of cardiovascular treatments
✓ Biomarker for treatment tailoring, e.g. to guide dosage of medications with vascular toxicity or NO donors

The Market:
Cardiovascular diseases prevention

There is an urgent need for a satisfying biomarker to improve risk stratification of patients with silent vascular disease and so prevent an evolution towards a cardiovascular disorder.

The quantitative measurement of nitric oxide bioavailability in vasculature is a novel biomarker of endothelial function will be useful for:

- Vascular endothelial dysfunction-related diseases
- Treatment tailoring and personalized medicine

Assessing the efficacy of clinical trials and so improving the safety and clinical utility of new drugs

INTERESTED TO BENEFIT FROM THESE SERVICES?
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