

The Biomarkers bio-ADM and DPP3 Complement Post-Cardiac Surgery Diagnostics to Early Detect Organ Failure

- *Post-surgical increase of endothelial function biomarker bioactive adrenomedullin (bio-ADM) concentrations predicts organ dysfunction.*
- *Bio-ADM may help identify patients with an increased risk of developing prolonged vasopressor dependence and prolonged ICU stay after cardiac surgery.*
- *Increased blood concentrations of cardiac depressant factor dipeptidyl peptidase 3 (DPP3) are related to the complexity and duration of the intervention.*

Hennigsdorf, Germany, March 24, 2022 - The diagnostic company SphingoTec GmbH (SphingoTec) announces new evidence supporting the use of innovative biomarkers in the early identification of organ dysfunction and risk stratification of cardiac surgery patients (1). Despite many serious post-operative complications (2), there are currently limited tools available for the early identification of organ dysfunction in these patients (3,4).

Scientists from the Radboud University Medical Center have analyzed the predictive value of bio-ADM and DPP3 for short-term outcomes in a prospective study in cardiac surgery patients. Bio-ADM and DPP3 represent two distinct molecular pathways involved in the development of circulatory shock (5). Compromised hemodynamics after surgery triggers the release of the hormone bio-ADM, a key regulator of endothelial barrier function and vascular tone. The current data shows that bio-ADM at day two after ICU admission effectively differentiated between high-risk and low-risk patients for developing organ failure.

The study data also confirmed the independency of a second pathophysiological process, the release of DPP3 upon cell death. Surgery acts as an additional factor leading to an increase in DPP3 in the bloodstream, which is mainly related to tissue injury and the extent of the procedure. Therefore, elevated levels of DPP3 decrease shortly after the surgery. Not surgery-induced and persistently high concentration of DPP3 signals impaired tissue perfusion and high risk for organ failure (5).

Dr. Andreas Bergmann, founder and CEO of SphingoTec, added, “Cardiac surgery is often accompanied by postoperative complications. By using the innovative biomarkers, clinicians can improve the risk stratification provided by conventional risk scores and improve their patient management.”

References:

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About SphingoTec

SphingoTec GmbH ("SphingoTec"; Hennigsdorf near Berlin, Germany) develops and markets innovative in vitro diagnostic (IVD) tests for novel and proprietary biomarkers for the diagnosis, prediction and monitoring of acute medical conditions. SphingoTec's proprietary biomarker portfolio includes bioactive Adrenomedullin (bio-ADM), a biomarker for real-time assessment of endothelial function in conditions like sepsis, and Proenkephalin (penKid), a biomarker for real-time assessment of kidney function. Dipeptidyl Peptidase 3 (DPP3), a biomarker for cardiac depression. IVD tests for SphingoTec's biomarkers are made available as sphingotest® microtiter plate tests as well as point-of-care tests on the Nexus IB10 immunoassay platform by SphingoTec's subsidiary Nexus Dx Inc. (San Diego, CA, USA). The Nexus IB10 portfolio is complemented by established and commonly used biomarker tests for acute and critical care such as PCT, Troponin, NT-proBNP, D-Dimer, TSH, and others.

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