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Diagnostics
is in our blood.

Stago Webinar

RECORDED WEBINAR

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Thursday, December 19, 2024, 3pm CET

MICROVESICLES : FROM RESEARCH TO CLINICAL PRACTICE

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Prof. Françoise Dignat-George
Head of Center for CardioVascular and Nutrition Research (C2VN) , INSERM , INRAE , Aix-Marseille Université

Chief of Department of Hematology, Timone Hospital, Marseille, France

Microvesicles:
from research to clinical practice

Microvesicles are small membrane-bound vesicles released from a variety of cells (platelets, red blood cells, leucocytes, endothelial cells ...) which circulate in the blood. Their size ranges from 100 to 1000 nm in diameter.

Microvesicles are involved in several important physiological and pathological processes, including coagulation, inflammation, immune response, and cancer metastasis.

The aim of this webinar is to present the role of microvesicles and how they can be used in clinical practice.

Microvesicles play a critical role in coagulation by exposing phosphatidylserine (PS) on their surface. PS promotes the coagulation cascade, leading to clot formation. Microvesicles play also a role in fibrinolysis; they can generate plasmin and vectorize fibrinolytic activity.

The dual role of microvesicles, which express both procoagulant and profibrinolytic molecules, has given rise to the concept of «microvesicle coagulytic balance» to describe their impact on hemostasis.

In addition to their roles in hemostasis, microvesicles are essential in inflammation, immune modulation, and cancer metastasis.

Microvesicles are becoming valuable biomarkers and therapeutic tools. As research advances, microvesicles could offer new strategies for early diagnosis and treatment, particularly in personalized medicine. Their ability to carry biological cargo opens the door to non-invasive diagnostics and targeted therapies, possibly revolutionizing healthcare.

Recent improvement in standardization and availability of commercial assays make microvesicles an interesting tool transitioning from research to clinical practice.

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Prof. Françoise DIGNAT-GEORGE
Aix-Marseille University
Center for CardioVascular and Nutrition Research (C2VN)

EDUCATION AND TRAINING

- Professor of Immunology and Hematology
- Head of Department of Hematology, Timone Hospital, Marseille France
- Director of Center for CardioVascular and Nutrition research

ACADEMIC & RESEARCH ACTIVITIES

Françoise Dignat-George has a long-standing expertise on Vascular Biology, Hemostasis, Inflammation and Angiogenesis, with a great interest in patient oriented/translational applications. The general objective is to understand the interaction of endothelium with circulating cells and extracellular vesicles and its dysregulation in vascular disorders, in order to identify news pathways and emergent therapeutic / diagnostic targets. The ultimate goal is to pave the way of "personalized vascular-targeted medicine".

Major activity of her group involves the discovery of a novel cell adhesive molecule localized at the endothelial junction, CD146, with a key role in inflammation, permeability and angiogenesis, and the identification of cell derived extracellular vesicles as key effectors able to disseminate procoagulant, proinflammatory or proteolytic information in the circulating blood with major implications in thrombo-inflammatory diseases and cancer. Her work contributed to identify these endothelial derived elements as emerging cellular biomarkers and bioactive vectors of prime interest that worth to be transferred to the clinics. Accordingly, task forces include original technologies for measurement of extracellular vesicles , coordination of international standardization studies and definition of guidelines for vascular monitoring. Different original assays, essential for research progress in this field have been developed by her group, thank to industrial partnership.

Françoise Dignat-George is the author of 513 publications in Web of sciences (H Index 81, Citation Index 19 072) , 14 patents and 3 licenses in the field of Vascular Biology and Hemostasis.

Her contribution to scientific research has been recognized by the attribution of scientific distinctions and awards, such as John Ugelstat Award and the Award Fondation Recherche Médicale « Cellular and Molecular Biology of the Endothelium ».

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