



Lille
Neuroscience
& Cognition



2026 SEMINAIRE

30 Mars
10h30

Bâtiment

Biserte

Meeting Room



Invité par Lille Neurodegeneration et TREAT

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(Taipei Medical University, Taiwan)

Platelets beyond hemostasis: Translational therapeutic platforms for regenerative medicine and brain disorders



Platelets have long been viewed primarily as mediators of hemostasis, yet they are a rich reservoir of growth factors, cytokines, extracellular vesicles (EVs), and other bioactive molecules with therapeutic potential. Over the past decade, platelet-derived products such as platelet lysates, platelet secretome fractions, and platelet extracellular vesicles (p-EVs) have emerged as promising biotherapies in regenerative medicine. Key advantages include their human origin, a favorable safety profile when appropriately manufactured, scalable production from donated allogeneic blood components, and multimodal biological activity combining trophic, immunomodulatory, antioxidant and anti-inflammatory, angiogenic, and neuroprotective effects.

Preclinical and early translational studies suggest benefits in tissue repair, joint injuries, wound healing, ocular disorders, and increasingly in neurological indications, including neurodegeneration, brain trauma, and aging-related dysfunction. Particular interest has focused on their capacity to support neurogenesis, preserve mitochondrial function, modulate neuroinflammation, and enhance tissue resilience after injury.

Important and addressable challenges remain, including rigorous product characterization, standardization and potency assays, improved understanding of mechanisms of action, clear regulatory positioning, and demonstration of clinical efficacy. Progress in these areas is essential to move platelet-derived biotherapies from experimental approaches to broadly accessible therapeutic platforms.

This presentation will review the current landscape of platelet-derived therapeutic products, discuss emerging applications in regenerative medicine and neuroscience, and highlight key translational hurdles and opportunities for future clinical development.

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