

The journey of porphysomes: from discovery to clinical translation

Porphyrins are light-absorbing molecules clinically used for photodynamic therapy and fluorescence imaging. Conjugating porphyrin to lysophospholipid forms porphyrin-lipid, a building block molecule that self-assembles into a liposome-like nanoparticle called porphysome. These simple building blocks impart inherent multifunctionality to porphysome for unparalleled theranostic utility (e.g., photothermal, photoacoustic, photodynamic, fluorescence, PET, MRI, and drug delivery). Using the same building blocks, we also created a family of porphyrin supramolecular assemblies with different sizes, shapes, and functions. The porphysome has trod an unconventional academic path towards the clinic for the past ten years, with canine patient trials ongoing and the first-in-human study to be launched within a year. The simple, intrinsically theranostic nature of porphysomes epitomizes a “one-for-all” nanomedicine design paradigm and confers exciting clinical promise.



**CARBON TO METAL
COATING INSTITUTE**
at Queen's University

Seminar

The Journey of Porphysomes: From Discovery to Clinical Translation



Dr. Gang Zheng

University of Toronto
Princess Margaret Cancer Centre

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Chernoff Hall Auditorium
(Room CHE 250)



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