POM-BASICS Summer School

"Polyoxometalate Chemistry for Fundamentals and Applications"

La Rochelle-France, June 13-15th 2022

Session 6 - POMs and the biological world

PART-1: POM biological activity (antiviral, -tumoral, -bacterial) and metalloenzyme mimics

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Abstract of the course:

In the first part of the lecture the solubility and solution stability of POMs is discussed, with a focus on aqueous solutions at physiological pH. Then several examples are discussed where POMs exhibit antiviral (HIV-1, Zika), antibacterial (Gram positive and negative), and antitumoral (neuroblastoma, leukemia) properties. Also, the inhibition of several enzyme families (e.g. phosphatases, protein kinases or ecto-nucleotidases) is presented. POMs are also relevant as cocrystallization agents for proteins and peptides, leading to the chemistry Nobel prize in 2009. Very recently, POMs have also been tested as inhibitors of SARS-CoV-2.