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Nanozymes: nanomaterials with enzyme-like activities

Abstract:

Natural enzymes, the superior biocatalysts selected by evolution, play critical roles in all biological systems. They have also been explored for lots of practical applications in various areas. However, their practical applications are still largely hampered by their intrinsic limitations (such as ease of denaturation and high cost). To tackles these limitations, extensive efforts have been devoted to searching natural enzyme alternatives (i.e., artificial enzymes, or enzyme mimics). To date, many nanomaterials have been exploited to mimic natural enzymes, which include carbon-based nanomaterials, metal-based nanomaterials, transition metal oxides-based nanomaterials, etc. Nanozymes are unique when compared to natural enzymes and even conventional artificial enzymes due to their nanoscaled size and associated features. Therefore, continuous development of nanozymes will not only unlock the great potential for practical applications, but also help us to promote sustainable green development.

Biography

Prof. Jiangjiexing Wu obtained her Ph.D. degree in 2014 from Tianjin University. Her current research focuses on the rational design and synthesis of functional nanomaterials (such as nanozymes) for analytical, biomedical, and environmental applications. She has high-quality publications in Nat. Commun., J. Am. Chem. Soc., Angew. Chem., Adv. Mater., etc. with more than 4600 citations, and been awarded several prestigious honors and awards, such as "RSC Emerging Investigators", "Gordon F. Kirkbright Bursary Award", and "IAAM Scientist Medal".