Peroxidase mimicking nanozyme mimicking cofactore structure of natural enzyme

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Recently, improving the selectivity of nanozyme has been received attention. There have been various nanozyme that have multiple enzyme activities, however, the activities could hinder their use in deliberate application. To overcome this problem, we synthesized Fe-N-rGO mimicking the cofactor structure of Horseradish peroxidase (HRP), natural enzyme, and successfully increase the peroxidase-like activity without oxidase-like activity. Density functional theory was adapted to figure out the improved activity of Fe-N-rGO. Furthermore, Fe-N-rGO was used to replace the HRP to detect acetylcholine with cascade reaction.