

KN-2**THE DESIGN OF AIEGENS AND NANO-COMPOSITE FOR BIOLOGICAL APPLICATION****Zhuo Wang**

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Abstract. As a “cell power plant”, an important function of mitochondria is the generation of energy molecules ATP. In addition, there are many other molecules and metabolites, regulating cell signal transduction, cell death and material metabolism. Mitochondrion plays a role in the development and progression of cancer. We design and synthesize AIEgens (Aggregation-Induced Emission) for mitochondrial-targeting imaging and chemical analysis. Moreover, these AIEgens can induce the generation of ROS. We use the AIEgens to modify the surface of polydopamine nanoparticles and apply the composite for tumor treatment. For the diagnosis of tumors, we construct a composite for two-modality tumor imaging. The nanocomposite can image in vivo tumors with fluorescent and photoacoustic signals. Moreover, the nanocomposite can be used to ablation of tumors by photothermal effect.