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12.00 h
Zoom

• INMA

Junior

The chemistry of tumors as new tool for alternative therapies using catalytic nanoparticles

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New strategies in cancer therapy focus on combining different catalytic processes: the depletion of key metabolites such as Glutathione (GSH) or Glucose, and the in situ generation of harmful Reactive Oxygen Species (ROS) species via Fenton reaction. GSH is a natural antioxidant which maintains the cytosol concentration of ROS (e.g. H_2O_2 , $O_2^{\cdot-}$ or $\cdot OH$) below cytotoxic levels. Glucose, as the major source of energy in cells, is required to ensure ATP levels, particularly in cancer cells. Thus, the design of new nanomaterials showing the ability to alter these species under tumor microenvironment (TME) chemical conditions are particularly interesting to control cancer growth. In this work, we present a nanoplatform based on Cu(II) and Fe(III) (CuFe) with the capability of triggering a cascade reaction specifically in TME conditions.

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