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Visually multiplexed quantitation of heavy metal ions in water using volumetric bar-chart chip

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Abstract

Heavy metal ions monitoring in water is practically significant for the environment and the human health. In this work, a lab-on-a-chip biosensor was developed for multiplexed quantitation of heavy metal ions by the integration of triple-channel volumetric bar-chart chip with DNA-nanoparticle probes. This method possesses the capability for rapid detection of Cu^{2+} , Pb^{2+} and Hg^{2+} simultaneously with high sensitivity, selectivity and accuracy. Due to the highly catalase-like activity of the

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