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## “Theranostic” Role of Bile Salt-capped Silver Nanoparticles- Gall Stone/Pigment Stone Disruption and Anticancer Activity

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Silver Nanoparticles (AgNPs) have been synthesized *in situ* in micelles formed by the bile salt sodium deoxycholate (NaDC). The AgNPs exhibit “green” fluorescence. It has been shown in the present study that they can disrupt the components of gall stones/pigment stones. This unique ability of the AgNPs has been observed upon detailed study of the interaction between the endobiotic pigment bilirubin (BR) and bile salt (NaDC). In addition, these AgNPs show significant cytotoxicity towards the breast cancer cells (MCF-7). Thus the AgNPs synthesized in this work show important physiological activity and can serve as prospective “*Theranostic Materials*” in future. Their green fluorescence bears relevance to future *diagnostic* applications while their anticancer activity and disruptive action upon BR aggregates in bile salt micelles is extremely important for *therapeutic* purpose. This is the first report of the use of metal nanoparticles in disruption of components of gall stones/pigment stones and thus the present work has very important physiological significance.