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Toxicity of pristine and β -cyclodextrin modified mesoporous alumina towards normal and cancer cell lines

Pritam Singh^a, Sanchaita Mondal^b, Moumita Saha^b, Krishna Das Saha^{b*}, P. K. Maiti^c and Kamalika Sen^{a*}

^aDepartment of Chemistry, ^cDepartment of Chemical Technology,

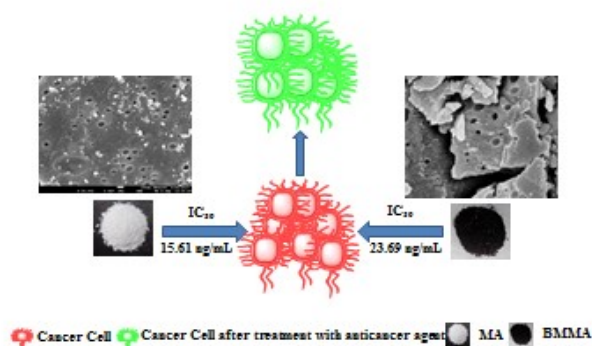
University of Calcutta, 92, Acharya Prafulla Chandra Road, Kolkata-700 009, India

E-mail: kamalchem.roy@gmail.com

^bCSIR-Indian Institute of Chemical Biology, 4, Raja S. C. Mullick Road, Jadavpur, Kolkata-700 032, India

E-mail: chem.sanchaita@gmail.com, moumitasaha@iicb@gmail.com, krishna@iicb.res.in

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Mesoporous alumina and its modifications are in vogue for their medical applications. These are mostly used for controlled delivery of different drugs for their internal porous configuration. However, studies on their candidature to be used for destruction of live cancer and normal cells are still in dearth. Herein, we report the synthesis and characterization of mesoporous alumina together with its modification using a carbohydrate, β -cyclodextrin (BCD). Thereafter we report on the cytotoxicity of these materials towards colon cancer cells (HCT 116) and normal kidney cells (HEK 293) together. The IC₅₀ values of the pristine alumina and the BCD modified alumina were found to be 15.61 ng/mL and 23.39 ng/mL respectively for HCT 116. It has been observed that both the materials can be perceived to be potential reagents for destruction of cancer cells.

Keywords: Mesoporous alumina, β -cyclodextrin, HCT 116, HEK 293, cytotoxicity.