Journal of Basic and Applied Engineering Research
Print ISSN: 2350-0077; Online ISSN: 2350-0255; Volume 2, Number 4; January-March, 2015, pp. 325-325

http://www.krishisanskriti.org/jbaer.html

Low Dimensional Carbon Material in Jaundice Diagnosis

Anindita Biswas[a], Himanshu Pandey[a,b] and Avinash Chandra Pandey[b]

[a]Department of Pharmaceutical Sciences, Faculty of Health Sciences, Sam Higginbottom Institute of Agriculture, Technology & Sciences, Allahabad (INDIA)- 211007
[b] Nanotechnology Application Centre, Faculty of Science, University of Allahabad, Allahabad (INDIA)- 211002

Abstract—*Jaundice is one of the prevalent water borne disease of India. Though it is often said that it is due to the contaminated ground water, the real picture is something pretty different. In a study of 124 patients, obstructive jaundice: a malign disease in 38 patients (30.6%) and a benign disease in 86 patients (69.4) were found. In another word, late recognition of jaundice, so called 'yellowing of body', leads to a very high mortality rate. This devastation could be altered if we could detect the oxidation of heme, when it is catalyzed by the microsomal enzyme heme oxygenase, and results in biliverdin. In consequences, this reduced to yellow color tetrapyrol pigment called bilirubin by cytosolic enzyme biliverdin reductase. Here we are working on developing a system which could colorimetrically detect the level of this reduction reaction. Due to the size and shape of low dimensional carbon material (LDCM), in conjugation with biocompatible polymer could is good choice for nanoimprint lithography method: jet-and-flash imprint lithography (J-FIL). This would confer versatile top-down processes to fabricate shape-specific, biocompatible nanoscale hydrogels that can deliver diagnostic molecules in response to biliverdin's concentration. An ELISA study with human serum would reveal the level of biliverdin reductase in minute, to help medical personnel to prevent loss of life in jaundice.*

Keywords: *Jaundice, Low dimensional carbon molecule, Nanoprint lithography, Colorimetry, Biliverdin reductase.*