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f. Signed Statement that the research work under reference has not given any award in the past to the applicant.

Our group has also contributed significantly to the understanding of breast cancer and glioma. In recent studies, the lab explored the anticancer potential of riboflavin activated by light irradiation, demonstrating selective inhibition of breast cancer cell growth under visible light, while sparing normal cells. This work, published in the Journal of Chemical Information and Modeling, highlights riboflavin's potential as a targeted therapeutic (**J. Chem. Inf. Model.** 2024, 64 (14), 5580–5589). Our lab also identified campesterol, a natural phytosterol, as a promising estrogen receptor alpha inhibitor for breast cancer, published in the Journal of Medicinal Chemistry (**J. Med. Chem.** 2024, 67 (12), 10321–10335). Our research extended to gliomas, where they identified Daidzin as a selective ADA2 inhibitor, which enhances the anti-tumor immune response by regulating macrophage polarization, a discovery published in the International Journal of Biological Macromolecules (**Int. J. Biol. Macromol**. 2023, 253 (Pt 7). Our laboratory has shown for the first time that Lumefantrine, an antimalarial drug, reverses radiation and temozolomide resistance in glioblastoma (**Proc Natl Acad Sci U S A**. 2020 Jun 2;117(22):12324-12331). We have also studied the efficacy of GW627368X, a selective EP4 prostanoid receptor antagonist in the treatment of cervical cancer in vitro and in vivo and elucidated its mechanism of action. We have also conducted a preclinical safety assessment of GW627368X treatment in mice sarcoma models. We utilized a combination treatment modality of EP4 receptor antagonism and photothermal therapy using gold nanoparticles. We designed multifunctional, drug-loaded gold nanorod-cored polymeric micelles allowing targeted drug delivery and photothermal activity simultaneously, and elucidated the molecular mechanism of photothermal therapy-induced cell death in cancer. All those works have been published in **BBA.** 2016 Oct 6. pii: S0304-4165(16)30378-6., and **Cell Death and Disease** 2016 Mar 24; 7:e2154. In vivo and vitro studies showed significant antiproliferation, apoptosis, and time-dependent cytoplasmic uptake of celecoxib-loaded Hap-Cht nanoparticles in HCT 15 and HT29 colon cancer cells and this work has been published in **Biomaterials** 32(15): 3794-3806. Potent antiproliferative and apoptotic effects of diacerein were observed against breast cancer (Oncogene, 2015, 28; 35(30):3965-75). The regulation of the cellular localization of ER by MTA1s represents a mechanism for redirecting nuclear receptor

signaling by nuclear exclusion. This work has been published in **Nature** 2001, 418(6898):654-657. We have also established a direct link between telomerase activity and cancer progression through the cell cycle (**Proc Natl Acad Sci USA** (1997) 93(12):6091-6095, and J Biol Chem (1997(272(22):14183-14187. Our group also showed that Prevention of epithelial to mesenchymal transition in colorectal carcinoma by regulation of the E-cadherin-β-catenin-vinculin axis which we published in **Cancer Lett.** 2019 Jun 28;452:254-263.

Our group has several patents, a) A process for the purification of a new motility-promoting protein from buffalo serum: A slaughter house waste by G.C. Majumder, M. Mandal, and S. Banerjee. Patent No 185383; Issue Date: August 3, 2001; Filing Date: March 17, 1997. b) Anti-Bacterial Hydrogel Composition and Application Thereof: Filed (Ref: 708/KOL/2013), c)System for cytoreduction of circulating cancer cells from blood and a method thereof: P. Chhatrala, S Paridha and M Mandal, 686/KOL/2015, One US patent entitled: A process for the purification of a new motility-promoting protein from buffalo serum: A slaughterhouse waste by G.C. Majumder, M. Mandal and S. Banerjee.US Patent No 6613737; Issue Date: September 2, 2003; Filing Date: March 10, 1998, Another patent in Japan entitled: A process for the purification of a new motility-promoting protein from buffalo serum: A slaughterhouse waste by G.C. Majumder, M. Mandal and S. Banerjee. Japan Patent No 3251545; Issue Date: November 16, 2001; Filing Date: March 6, 1998. Currently, I am, along with a team of oncologists, physicists, and engineers trying to determine the changes of molecular, bio-physical, and bio-electrical properties in cancer during the transformation from benign to malignant form as well as acquiring chemoresistance.

Due to my significant contribution to the cancer Biology area, I have received several Fellowships and awards like FNA, FASc, FNASc, FAScT, FRSB, J C Bose National Fellow, SS Katiyar Award by the Indian Science Congress in 2018, Basanti Devi Award by ICMR in 2018, Subha Mukherjee Memorial award in 2013 by Physiological Society of India. I was also elected as a Fellow of West Bengal Science Academy in 2013 (WAST). He also serves as an editorial Board member of several journals like Scientific Report, PLoS One, and Journal of Biomedical Engineering; I am also regularly invited as a speaker due to his significant contribution to different International and National conferences like the American Cancer Research Association, Indian Cancer Research Association, Physiological Society of India, etc. All the works have not been given any awards in the past.

(Prof. Mahitosh Mandal)

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