



SIKSHA 'O' ANUSANDHAN

(A Deemed to be University declared u/s 3 of UGC Act, 1956)

Accredited (3rd Cycle) by NAAC with A++ Grade

Ref.No.:SPS/SOADU/953/2023

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CITATION ON THE RESEARCH WORK

The project work submitted for the Sun Pharma Science Scholar Award 2023 by the nominee Mr. Suvadeep Mal, a PhD research scholar from Siksha 'O' Anusandhan (Deemed to be University) is a part of Mr. Mal's PhD thesis work based on flavonoid engineered gold nanosystems for targeted therapy against drug resistant breast cancer and pathogenic strains. Mr. Mal is working as a PhD Scholar from 21.12.2020 till date under the supervision of Prof. (Dr.) P. Sudhir Kumar and Prof. (Dr.) Partha Roy.

The research work submitted by Mr. Mal marks the first report of combating triple negative breast cancer (TNBC) with targeted therapy using flavonoid conjugated gold nanoparticles. Depending on a fact that TNBC cells over-express epidermal growth factor receptor in 45-70% of infected patients, the team of Mr. Mal explored a strategy to target this receptor with EGF-tagged flavonoid (luteolin)-conjugated gold nanoparticles synthesized through a facile and fast ultra-sonication assisted route. The synthesized particle obtained spherical shape with excellent stability when characterized using high facilitated analytical techniques. The particles exhibited remarkable cytotoxic capability induced by necrosis as well as apoptosis against TNBC cell in vitro. Confocal microscopy confirmed rapid localization of EGFR-targeted nanoparticles in the nucleus of cancer cells leading to its improved performance. Furthermore, nanoparticles showed biocompatibility against non-malignant cells pointing its use with biosafety concern.

The particular work has been published in a high impact journal under the publishing house 'Elsevier' in 2023 and already got 3 citations. Mr. Mal is having an impactful and growing profile with 12 publications, 42 citations, h-index of 4 and Research Interest Score of 31.3 till now. As of now, he is developing methods for novel and newer flavonoid conjugated gold nanosystems against drug resistant cancer and pathogenic strains.

Looking out of his continuous and avid hardwork in his field, I strongly suggest his nomination and wish him all the best.


31/03/23
DEAN

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