New insights into designing nanoparticle-mediated delivery for central nervous system diseases: Signaling and gene regulatory networks in epidermal growth factor

Leonardo Barcelos de Paula[1†], Bárbara Gimenes de Castro[1], Luandra Aparecida Unten Takahashi[1] and Antonio Claudio Tedesco[1*]

1) Chemistry Department, Faculty of Philosophy, Sciences and Letters of Ribeirão Preto, University of Sao Paulo, Ribeirão Preto, São Paulo, Brazil

e-mail: †barcelos@usp.br / *atedesco@usp.br

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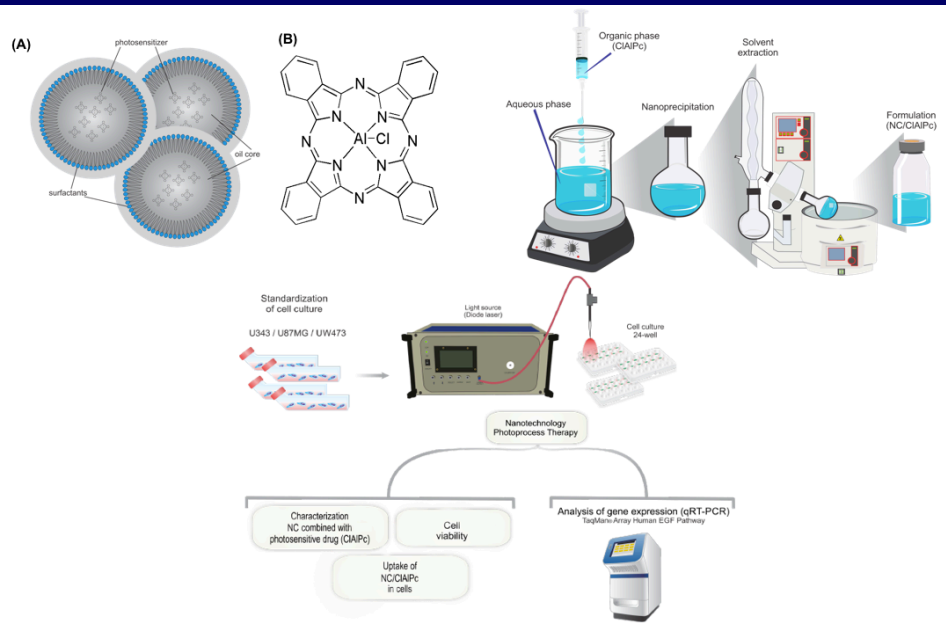
ABSTRACT

Glioblastoma Multiforme (GBM) can develop rapidly in the absence of clinical, radiological or morphological diagnosis from a less malignant precursor tumor[1]. Medulloblastoma (MB) is a malignant embryonic tumor of the cerebellum, the incidence of which occurs preferentially in children under 7 years of age[2]. The efficiency of Photodynamic Therapy (PDT) consists of the combination of a photosensitive drug and activation by visible light. The present study is to investigate the gene expression profile of signaling the Epidermal Growth Factor (EGF) pathway in GBM lines MB and after PDT treatment. These findings confirm that the engineering of nanocarriers associated with PDT procedures led to the hypoexpression of the genes that are directly involved in the EGF tumor process. Such findings contribute to the development of advanced protocols that may aid in the *in vivo* assays available for clinical oncology.

GRAPHICAL ABSTRACT



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