ABSTRACT

Nasopharyngeal carcinoma (NPC) is a human malignancy with a distinct geographical and racial distribution particularly in regions such as North Africa, Southeast Asia and China, affecting up to 129,000 individuals worldwide and its mortality rate reaching up to 56%. Asiatic acid (AA) is one of the phytochemical constituting the major compounds found in the herbal plant, *C. asiatica,* AA has been extensively studied and gained plenty of interests due to the potent biological effects it possess towards numerous pathologies including cancer. Chemically-modified AA to its backbone, also known as the AA derivative have gained an even further interests due to most of its enhanced biological effects compared to the original AA. However, there has yet studies which proves its anticancer effects of AA nor its derivatives on NPC. Therefore, the evaluation of anticancer effects of AA and its derivatives were done on a CNE2 NPC cell through a series of oncogenic phenotypic changes such as cell proliferation, migration and invasion subsequent to the treatments. Protein quantification of claudin-1, p-Akt and t-Akt were then done to uncover any underlying anticancer mechanisms of AA. We found that all the AA treatments significantly inhibited cellular proliferation, migration and invasion to the CNE2 cells 24 hours subsequent to the treatment. Claudin-1 expression were found to be reduced in all the treatments, whereas reduction of p-Akt expression were also observed in the AA and the AA-C treatment. Altogether, this suggests the potential target proteins in the oncogenic phenotype-inhibiting mechanism of AA and its derivatives.