ABSTRACT

Colorectal adenocarcinoma is the 10th most common cancer in the world and the 3rd in mortality rate. Treatments given are usually chemotherapy, radiotherapy, and surgery, however these chemical based treatments gave an extensive side effect. According to WHO, up to 80% of developing countries rely on traditional medicine for their healthcare. One of the oldest traditional medicinal activities used for mouth cleaning in Indonesia is called *nyirih*. This activity uses a combination *Piper betlel* (PB) and *Areca catechu* (AC). However, the effect of these plants towards cancers and our healthy cells are not widely known. MTS assay was performed on colorectal adenocarcinoma (HT29) and embryonic kidney (HEK293) cell line treated with different concentrations of AC. It is found that the AC extract affects both HT29 and HEK293. The IC_{50} of HT29 is 141.28 µg/mL and the HEK293 is uncountable. Furthermore, AC extract shows a higher inhibition compared to positive control (cisplatin 30 µg/mL). This result shows that AC extract contains phytochemicals such as saponins, tannins, and alkaloids that may induce cytotoxic effect towards HEK293 and HT29 in certain concentrations. HEK293 at 250 µg/mL and HT at 500 µg/mL.

Keywords: *Colorectal adenocarcinoma, Areca catechu, Piper betle, Cytotoxicity*