EFFECT OF ANNONA SQUAMOSA EXTRACTS ON HUMAN LIVER CANCER CELL LINES

Afiq Aizuddin[1], Maisarah Ab Fatah[1], Zulfadli Rosman[1], Mohamed Ibrahim Noordin[1]

[1] Malaysian Institute of Pharmaceuticals and Nutraceuticals (IPharm), Penang

Based on global cancer statistics released in 2015, liver cancer ranks number5 and 9 of the malignant tumors for males and females, respectively (Torre *et al.*, 2015). The factors that contribute to the development of liver cancer are infection of viral hepatitis, aflatoxin contamination of food, pollution of drinking water and some other factors (Tang, 2011).

Photo of liver condition from liver cancer patient

The alarming increase in prevalence of liver cancer indicates that better treatments and novel prevention strategies to overcome this disease are urgently needed.

The search for safer and affordable anticancer drugs has led to the testing of many plants for such activity. Plants aregood sources of drug since they provide an inexhaustible pool of efficacious agents for treating diseases.

Annonasquamosa or locally known as durian belanda or custard apple is a kind of tropical fruit that has great health-benefits. It was traditionally utilized for treatments of dysentery, cardiac problems, fainting, worm infections, constipation, hemorrhage, fever, thirst, malignant tumors, and ulcers (Nadkarni, 2000). Besides, it is also used for preparing delicacies such as juices, ice creams, milk shakes and soft drinks due to its delicious white creamy fruit pulp, besides having high nutritional

value in food industry.

Photos of custard apple tree (left) and fruit (right)

Based on *in vitro* evaluation, alamar blue assay of methanol extracts of leaves and stems of this plant showed potential anticancer activity on HepG2 cell lines (liver hepatocellular carcinoma) with IC_{50} values of <0.2 µg/ml and 2.04 µg/ml respectively. Interestingly, cytotoxicity activity on BRL-3A cell line (normal rat liver cell) produced IC_{50} values of 59.93 µg/ml and 71.75 µg/ml respectively, signifying no cytotoxicity effect on normal cells. Thus, these results suggest that the extracts of leaves and stems of *Annonasquamosa* may be useful sources for cancer treatment.

References

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