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Phenolic compounds from wood extract of *Artocarpus heterophyllus* and their inhibitory activity on EBV-EA induction

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Thai/Lanna medicinal plants recipes has been used for the treatment of several diseases including cancers. Wood of *Artocarpus heterophyllus*, well known as Jackfruits, is one of the ingredients of these recipes. In this study, *Artocarpus heterophyllus* wood was investigated for its anti-cancer properties. The methanolic extract and its soluble-fractions were evaluated for their anti-tumor promoting activity via in vitro Epstein-Barr virus early antigen (EBV-EA) screening. The extract exhibited potent inhibitory effect against 12-O-tetradecanoylphorbol-13-acetate (TPA)-induced EBV-EA activation in Raji cells. The extract was partitioned subsequently to the four soluble fractions (hexane, ethyl acetate, n-butanol and water). The ethyl acetate fraction was fractionated with silica gel column chromatography and purified by high-performance liquid chromatography to obtain 11 compounds. These compounds were phenolic compounds including flavonoids. The structure of compounds was identified by means of ¹H-NMR, ¹³C-NMR and mass spectrometer by comparison of the data in literature. These compounds were evaluated for their anti-tumor promoting activity by EBV-EA assay. Artocarpin, one of flavonoids with two prenyl (3-methyl-2-butenyl) moieties, exhibited the best inhibitory effect against EBV-EA induction, which was higher activity than reference compound. This study revealed that the flavonoids from the *Artocarpus heterophyllus* wood extract exhibited the potent anti-tumor promoting effect on EBV-EA induction and the principle of its activity might be due to flavonoids with prenyl moiety.

Biography

Hiroyuki Akazawa has received his PhD degree in Engineering from Nihon University, Tokyo Japan in 2010. He was a Postdoctoral fellow at the Natural Product Research and Development Center, Science and Technology and Research Institute, Chiangmai University from 2010 to 2014. He is currently working as an Assistant Professor at Department of Biotechnology and Material Chemistry, Nihon University Junior College. His research interest includes the natural product in Asia, structure elucidation of compounds and bioactivities that included anti-cancer, anti-melanogenesis and anti-oxidant. He has published 24 papers in reputed journals.

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