ABSTRACT

Free radicals can be caused by exposure of UV rays. Free radicals in the body can be a trigger of many diseases. Photoprotective agent can protected the skin from exposure of UV rays. In addition, antioxidant compound can also reduced a negative impact of free radicals. Red dragon fruit (*Hylocereus polyrhizus*) was one of the fruits which contain a flavonoid compound. This compound can acted as photoprotective and antioxidant agents. This study aims to know the content of flavonoid in the peel of red dragon fruit (*Hylocereus polyrhizus*) and knowing the antioxidants and photoprotective activities.

The peel of red dragon fruit (*Hylocereus polyrhizus*) extracted within ethanol then macerate fractionated with ethylacetate. The content of phenolic and flavonoid compounds of ethylacetate fraction of the red dragon fruit (KBNM-*AcOEt*) tested with TLC method, Folin-Ciocalteu method, and chelation $AlCl_3$ method. Furthermore, the free radical (DPPH) scavenging test was be done to found out the antioxidant activities of KBNM-*AcOEt* and *in vitro* test with spectrophotometry method was conducted to found out the SPF value of KBNM-*AcOEt*.

The Total Phenolic Content of KBNM-*AcOEt* was 1493,4641 ± 14,9757 mg GAE/100g and the Total Flavonoid Content of KBNM-*AcOEt* was 16,5278 ± 0,3612 % b/b EQ. Antioxidant activities of KBNM-*AcOEt* was weak (> 150 µg/mL). It was seen from the IC_{50} value of KBNM-*AcOEt* (491.9421 µg/mL). Meanwhile, the SPF value of KBNM-A*cOEt* was very low (0.0069 ± 0.0071). The KBNM-*AcOEt* at a concentration of 5, 25, 50 and 100 mg / L does not have photoprotective activities.

Keywords : Antioxidant, Ethylacetate, *Hylocereus polyrhizus,* Photoprotective.