Formulation and evaluation of antioxidant cream containing methanolic extract of *Piper betel* leaves

RAVINDRAN MUTHUKUMARASAMY NUR AIN NAJIHAH MOHD IDERIS

Abstract:

The Reactive oxygen species (ROS) accelerates the intracellular and extracellular oxidative stress and considered as a cause that leads to skin aging, which is characterized by wrinkles and atypical pigmentation. The antioxidant activity of the *Piper Betel* leaves were researched previously by many researchers, but there is no information with formulation of an antioxidant cream. Take this as consideration, the present study is focused to formulate and evaluate the antioxidant cream comprising the methanolic leaves extract of *Piper betel*. The *in-vitro* free radical scavenging activity was studied by using stable 2,2-Diphenyl-1-picrylhydrazyl (DPPH). The leaves extract showed commanding high radical scavenging properties, the half maximal inhibitory concentrate ($IC_{50}$) result revealed that leaves of *piper betel* shows good antioxidant properties with 56.88µg/ml. The formulation comprises with 2% of extract and was formulated using fusion method. The formulation was subjected to standard evaluation process on the following parameters like pH, homogeneity, spreadability, non-volatile matter at 105°C, rheological study, microbial limit test and physical stability of cream. The evaluation of the formulated cream showed good results and can be good potential for cosmetic product development. Further study has to be conducted on masking the colour and to enhance the pleasant odour of the formulated cream.

Keywords: *Piper betel*, DPPH, antioxidant cream, physiochemical parameter.

DOI : https://doi.org/10.22376/ijpbs.2016.7.4.p323-328