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Research Article

**Evaluation of *in-vitro* antioxidant activity of marketed Tobacco products**

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**Abstract**

**Objective:** In this study, the antioxidant activities of methanolic extract of marketed tobacco products were evaluated by different *in vitro* antioxidant methods.

**Materials and methods:** The different marketed tobacco products were extracted with methanol by means of maceration process. These extracts were screened for antioxidant activity by different *in vitro* assay methods including Reducing power assay, Phosphomolybdenum assay, Iron chelating assay and Nitric oxide scavenging activity. The screening was carried out at different concentration including 100, 200, and 300 µg/ml in reducing power assay, phosphomolybdate assay and Nitric oxide scavenging activity while in chelating assay the extract was used in concentration of 50, 100, 150 and 200 µg/ml.

**Results:** All Tobacco products exhibit the antioxidant potential with increasing concentration. The anti-oxidant activity of the marketed tobacco product might be attributed to its polyphenolic content and other phytochemical constituents. Hence, further investigation need to be carried out to isolate and identify the anti-oxidant compounds present in the Tobacco extract.

**Conclusion:** Our study concluded that, the Tobacco causes addiction and dependence but till it has many folklore traditional medicinal uses. If it is used in positive way then it has power to treat and protect but if misused then it have power to harm the body.

**Keywords:** Tobacco products, Reducing power assay, Phosphomolybdate assay, Iron chelating assay, Nitric oxide scavenging assay.

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**1. Introduction**

In our body, cells Produces the oxidants in normal and pathological condition. Such Oxidants are useful to our body to destroy the microbes. Sometime the uncontrolled production of oxygen derived free radical such as Reactive Oxygen Species (ROS). This ROS mediated the oxidative damage to micro molecules and it causes the various disease such as Cardiovascular disease, Cancer, Aging, Diabetes, Rheumatoid arthritis, Cirrhosis, etc. [1].

However, antioxidants have evolved with protective roles against such damage. Many medicinal plants have antioxidant value which can prevent the

destructive/ degenerative effects caused by oxidative stress [2]. Oxidative stress indicates a serious imbalance between the production of free radical and the antioxidant defence system, resulting in tissue damage [3].

Although Tobacco is well known cancer causing agent many traditional uses claim its medicinal value. The different scientific study reveal the presence of different chemical constituents in tobacco including polyphenol as antioxidants, hence present study was done with the objective to evaluate the antioxidant activity of various Tobacco products which are easily available in market. Tobacco is a product processed from the dried leaves of *Nicotiana Tobacum* (family: Solanaceae) [4,5]. In India,

IJPR | VOL. 09 | ISSUE 10 | 2019

Page 1 of 5  
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