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Antioxidant activity of polyphenolic extract of *Terminalia chebula* Retzius fruits**Sarmistha Saha, Ramtej J Verma****Authors: Sarmistha Saha* and Ramtej J Verma**

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Running Title: Antioxidant activity

Abstract

The purpose of the present study was to investigate the *in vitro* antioxidant activities of polyphenolic extract of fruits of *Terminalia chebula* Retzius (Combretaceae). The polyphenolic extract of *T. chebula* fruits was evaluated for antioxidant activity by determining reducing power assay, total antioxidant capacity, DPPH radical (IC₅₀ 14 µg/mL), nitric oxide radical (IC₅₀ 30.51 µg/ml) and hydrogen peroxide scavenging assay (IC₅₀ 265.53 µg/ml) under *in vitro* conditions. Moreover the phytochemical characterization of the extract was also measured by determining total phenolic, flavonoids, tannin and ascorbic acid contents. The characterization of the extract was also done by HPLC profiling with standard gallic acid. The present study demonstrated that extract have significant reducing capacity and scavenging of nitric oxide as well as hydrogen peroxide induced radicals. This activity of the extract may be due to the total polyphenolic contents present in it. The antioxidant activity of the extract was more significant than standard ascorbic acid in a concentration-dependent manner. The present study concluded that a polyphenolic rich fraction of *T. chebula* fruits is a potential source of natural antioxidants.

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