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STANDARDIZATION AND IN-VITRO ANALYSIS OF ANTIOXIDANT ACTIVITY OF SARPAGANDHA CHURNA

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Sarpagandha Churna is a herbal medicine given to patients suffering from hypertension, psychosis and insomnia. It consists of pericarp of *T. chebula* fruits and *R. serpentine* roots at a ratio of 1:2 (w/w). In the present study, an attempt was made towards standardizing *Sarpagandha Churna* in terms of phytochemical and physico-chemical analysis and determination of microbial counts and heavy metals, evaluating antioxidant potential of *Sarpagandha Churna* and its ingredients in terms of DPPH and ABTS scavenging activities, total polyphenol and flavonoid content using standard protocols. Results revealed, phytochemicals such as alkaloids, flavonoids, phenols, saponins, steroids, tannins, sesquiterpenes were present in *Sarpagandha Churna*. The percentage of moisture, total ash, water soluble ash and acid insoluble ash of *Sarpagandha Churna* were 10.3 ± 0.0 , 3.2 ± 0.1 , 2.2 ± 0.4 , 0.1 ± 0.0 %(w/w) respectively. Thin Layer Chromatography TLC, fingerprints were developed for *Sarpagandha Churna* and its ingredients. Thin Layer Chromatography fingerprint profile of *R. serpentine* is similar to *Sarpagandha Churna*. Further, all tested heavy metals; Hg, As, Pb and Cd were below the minimum detectable level of 0.05 mg/kg. Harmful microorganisms such as *Coliforms*, *Escherichia coli*, *Salmonella* were not present and minimal amounts of *Staphylococcus aureus*, aerobic bacteria, yeast and mould were present in *Sarpagandha Churna*. In DPPH assay, lowest IC₅₀ was observed with *T. chebula* and followed by *Sarpagandha Churna* and *R. serpentine* respectively. The highest number of polyphenols and flavonoids were present in *T. chebula* followed by *Sarpagandha Churna* and *R. serpentine* respectively. In conclusion, results of physico-chemical parameters, phytochemical analysis and antioxidant activity can be used to identify a genuine drug and detect any adulteration of *Sarpagandha Churna*. Further, it can be used as a reference in setting limits for quality assurance of *Sarpagandha Churna*.

Keywords: *Sarpagandha Churna*, *Rauwolfia serpentina*, *Terminalia chebula*, standardization, antioxidants, polyphenols, flavonoids.