ABSTRACT

Ricin is a highly toxic, naturally occurring protein in castor bean plant and used as potential bio warfare agent through which people can easily be affected by its all routes of exposure. Mode of action, availability, solubility, sustainability, make ease for ricin delivery to the subject. Identification of ricin with little sample preparation was done and 16 different medicinal castor oil samples were collected from the local market and checked for contamination with ricin toxin (contamination during the procedure of oil expelled out of castor bean). The classical methods for extraction of purified ricin (cytotoxin) from castor oil seeds were adopted. Identification of ricin with small sample preparation was done. The confirmation of ricin was carried out with gel electrophoresis (SDS-PAGE). FTIR analysis was performed for the specific ricin structure determination. Concentration of ricin in castor oil samples was carried out by observing absorption at 279 nm on UV-Visible spectrophotometer. The maximum amount of ricin was found to be 0.713 mol L^{-1} (0.43 mg / 10 mL). Minimum inhibition concentration of ricin was inferred against E.coli bacterial strains, by agar dilution method. Medicinal castor oil was found unsafe with ricin (cross contamination) and may have adverse effects on medicinal intake.

Key words: Forensic Science, Ricin, Toxicology, Gel Electrophoresis, Fourier Transform Infra- Red Spectrophotometer, Ultra Violet-Visible Spectrophotometer.