

## A simple spectrophotometric method for determination of solasodine In solanum xanthocarpum capsule formulations

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### SUMMARY

The present study deals with development of a new spectrophotometric method for determination of solasodine from Solanum xanthocarpum capsules. The method was based on the development of the color by chemical reactions with the active constituent (solasodine) and the absorbance was read in a UV-Visible spectrophotometer at wavelength 425 nm. The % w/w of solasodine obtained was 91.66 in ayurvedic formulation (capsule) code S1 and 95.0 in second formulation code S2.

Key words : Solasodine, Capsules, UV-visible spectrophotometer.

**S**olanum xanthocarpum is an important medicinal plant belonging to family Solanaceae. It is used to cure various diseases like gonorrhoea, rheumatism, cough, asthma, catarrhal fever and sore throat. Proteins, carbohydrates, vitamin C, anthocyanin and the chief active constituent solasodine have been reported in Solanum xanthocarpum. The marketed formulations of water and ethanolic extract containing solasodine are available in the market. Usually the standardization of herbal formulations is difficult task because of complexity of the constituents.

Taking above in view attempts were made to develop a simple spectrophotometric method for the determination of solasodine in capsule formulation of aqueous and ethanolic extracts of fruit of Solanum xanthocarpum.

### MATERIALS AND METHODS

Pure solasodine was a kind gift from Shiv Herbal Research Laboratories Ltd., Nagpur. All chemicals used were of analytical grade.

#### *Collection of Medicinal Plant*

The medicinal plant Solanum xanthocarpum was selected and their fruits were isolated from arni village dist. Yavatmal, Maharashtra. The collected plant materials were brought to the laboratory for extraction.

#### *Preparation of Extracts*

The fruit of the medicinal plant was cleaned and dried under shade. The dried material was ground well to fine powder. Powdered plant material was extracted with ethanol using soxhlet apparatus. The extraction was

continued for 24 hrs. The extract was filtered and kept in oven at 40 °C for overnight. Greenish black residue was obtained

The aqueous extract was obtained using decoction method. The extract was dried in oven at 45 °C for 36 hrs.

#### *Filling of Capsules*

The capsule formulation contained

Aqueous extract of Solanum xanthocarpum	-	45 mg
Dicalcium Phosphate	-	454 mg
Sodium benzoate	-	0.5 mg
Methyl Paraben Sodium	-	0.06 mg
Propyl Paraben Sodium	-	1.0 g

#### *Preparation of standard solution*

A solution of standard solasodine having concentration 40mcg/ml was prepared in acetic acid. This solution was used for quantitative purpose. About 10mg of pure solasodine was weighed accurately and dissolved in 25ml of 20% acetic acid. Ten ml of this solution was diluted to 100ml with 20% acetic acid. From it 1, 1.5, 2.0, 2.5 & 3ml were pipetted & transferred to separating funnels in order to prepare standard curve of solasodine

Into each separating funnel 5ml of acetate buffer and 1ml of methyl orange solution was added. After shaking for 15 seconds, 10 ml of chloroform was added and was further shaken for 3 minutes. The chloroform layer was withdrawn into a dry test-tube by a pipette and a dry test tube by a pipette and dried with anhydrous sodium sulphate. Absorbance of each solution was read

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