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ESTIMATION OF STEROLS FROM *DASHMULA*

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ABSTRACT: *Dashmulakwatha, a preparation of Dashmula official in the Ayurvedic Formulary, was estimated for its phytosterol content by HPTLC method. The preparation was found to contain 7.165% W/W of phytosterols with respect to β-sitosterol as standard.*

INTRODUCTION

Dashmula is a preparation official in Ayurvedic Formulary[1]. It is an important combination of ten roots viz., *Desmodium gangeticum* DC, *Uraria lagopoides* DC, *Solanum xanthocarpum* S.W., *Solanum indicum* Linn, *Tribulus terrestris* Linn, *Aegle marmelos* Corr; *Clerodendron phlomoidus* Linn, f., *Oroxylon indicum* Vent, *Gmelina arborea* Linn and *Stereospermum suaveolens* DC. It is used in formulations such as *Dashmulakwatha, Dashmularishta, Dashmulaghrta* etc. The decoction of the roots is administered in catarrhal fever, inflammatory affections within the chest, cough and many other diseases caused by vata, pitta and kapha[2].

Dashmulakwatha churna is a mixture of all ten roots in equal proportion, decoction of which is administered therapeutically. The phytochemical screening of these roots individually showed the presence of sterols when tested by Liebermann Burchard sterol reaction. Hence the preparation was estimated for the total sterols with respect of β-sitosterol as standard using High Performance Thin Layer Chromatography (HPTLC) technique.

MATERIALS AND METHODS

The roots of *D.gangeticum, U. lagopoides, A. marmelos, C. phlomoides, O. indicum and S. suaveolens* were obtained from M/s. Zandu Pharmaceutical Works, Bombay *S. xanthocarpum, S. indicum and G. arborea* roots were procured from Kalbadevi Market, Bombay. *T. terrestris* roots were collected from Aurangabad Forest Department.

The roots of all the ten plants were dried in air, powdered individually and passed through 60# sieve. A *kwathachurna* was prepared by weighing equal amounts of these roots and mixing thoroughly well in a mortar and pestle and stored at 20Ec during the period of work.

Dashmulakwatha churna, 2g, was extracted with ethanol(95%) in a Soxhlet extractor for 8 hrs. The alcoholic extract thus obtained was concentrated on water bath to 10 ml. This concentrated extract was used for

estimation. B-sitosterol was taken as a reference standard and a solution of 25 mg/ml was prepared in chloroform.

Different concentration of test solution (10 ml and 20 ml) and standard solution (4ml, 6ml, 8ml, 10ml, 12ml, 14ml and 16ml) were applied on HPLTC plates (precoated silica gel G 25, E. Merck, on aluminium support, 0.25 mm thick) by means of automatic spray on technique (Linomat IV) in the form of bands. The plate was developed to a distance of 7 cms, using the solvent system consisting of chloroform, benzene and ethanol (95%) in the proportion 75:25:5 in twin through chamber (3).

After the development, the place was dried in the air and scanned on Camag HPTLC scanner at 366 nm in fluorescence mode.

All the solvents and reagents used were of AR grade. The results are presented in Table 1. The standard curve of β-sitosterol with respect to peak area is given in fig.1.

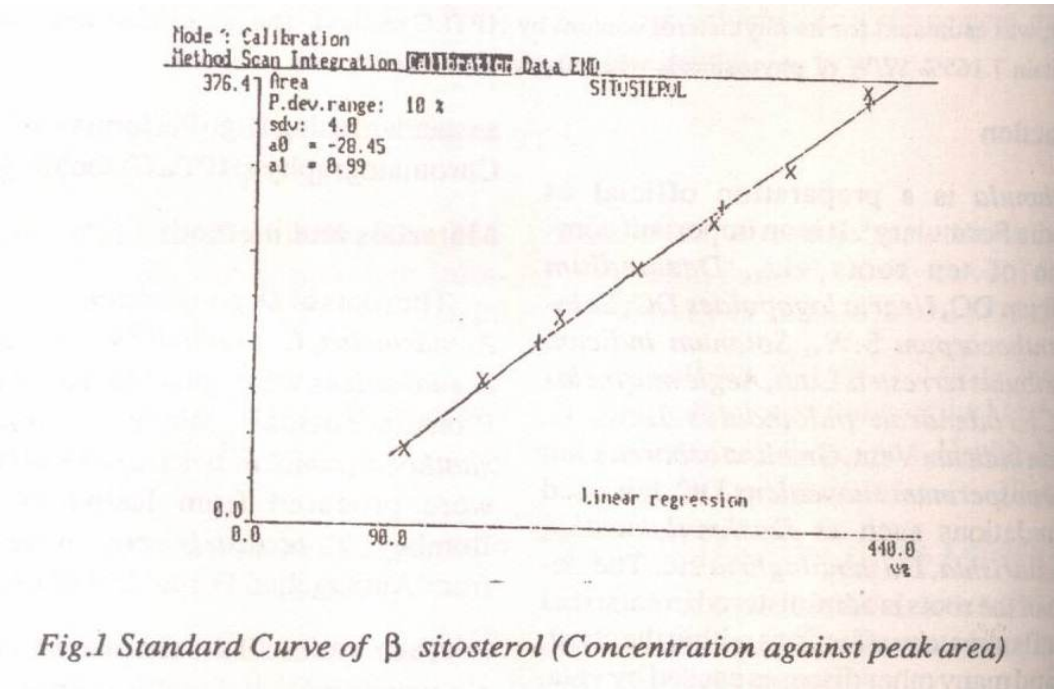

Fig.1 Standard Curve of β sitosterol (Concentration against peak area)

RESULTS AND DISCUSSION

The percentage of phytosterols calculated from the results was found to be 7.165% w/w (air dried drugs) with respect to β-sitosterol as standard. The high percentage of phytosterols in *Dashmula* explains the use of this preparation as an anti-inflammatory and antibacterial agent.

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