Validated method for Simultaneous quantification of vasicine and vasicinone by reverse phase HPLC and HPTLC in Sida species

Kamlesh Dhalwal, Vaibhav M. Shinde and Kakasaheb R. Mahadik

Department of Pharmacognosy and Phytochemistry, Poona College of Pharmacy, Bharati Vidyapeeth University, Erandwane, Pune- 411038, Maharashtra, India.

Quantification of bioactive principles through modern analytical tools is essential for establishing the authenticity and creditability of prescription and usage of herbal drugs. In the present study, simultaneous quantification of vasicine and vasicinone by reverse phase HPLC (RP-HPLC) and HPTLC methods were developed. In the RP-HPLC method, the drugs were resolved using a mobile phase of acetonitrile–0.1M phosphate buffer–glacial acetic acid (15:85:1, v/v/v) with pH adjusted to 4.0 using phosphoric acid on a C18-ODS-Hypersil (5 microm, 250 mm x 4.6 mm) column in isocratic mode. The retention time of vasicine and vasicinone was 5 and 8.7 min, respectively. In the HPTLC method, the chromatograms were developed using a mobile phase of ethyl acetate: methanol: ammonia (8:2: 0.2, v/v/v) on precoated plate of silica gel 60 F254 and quantified by densitometric absorbance mode at 300 nm. Validations of the methods were done to demonstrate its selectivity, linearity, precision and accuracy as recommended in the ICH guidelines. Excellent linear behaviors over the investigated concentration ranges were observed with the values of $R^2$ higher than 0.998 for both the analytes. Recovery values of 99.16-101.89%, percentage relative standard deviation of <0.7 and correlation coefficient (linear dynamic range) of 0.9843-0.9999 shows that the developed methods were accurate and precise. These methods can be employed for the routine analysis of the quality of herbal extracts and formulations.