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Interspecies variability assessment of *B. aristata* and its related species using HPLC fingerprinting and principle component analysis for standardization and quality control of their herbal drugs

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The plants belonging to *Berberis* species are extensively used in various ayurvedic, homeopathic and ethno-medicines as raw material or as an ingredient. Presence of various major and minor secondary metabolites and their amount plays very crucial role in the standardization and quality control of herbal medicines. Therefore, more objective and definitive methods are necessary for knowing about the chemical variability amongst the genuine and commonly available species of the same plant. In the present study an attempt has been made to critically analyze the variability among the popular *Berberis* species on the basis of conventional single marker based approach and subsequently using the more advanced method of HPLC fingerprinting with principle component analysis and similarity analysis. The experiments were carried out to throw light on the variation in extractive value (%) and Berberine content (%) with species, location, part of the plant and season and use of comprehensive HPLC DAD profile with PCA to access the variability among different species and effect of location and stage of harvested plants (vegetative and reproductive). It was concluded that PCA models constructed as per the locations and species and similarity analysis done on the basis of comprehensive HPLC fingerprinting data could be very useful for the herbal industries for predicting the origin of raw material, variability study for the authentication and standardization of raw material in terms of location and species.

Biography

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