FUTURE PROSPECTS

Several advantages of SCAR markers have been mentioned in the literature. These include identification of the organisms at the level of lowest taxon, gender identification, identification of adulterants in crude drugs of herbal and animal origins etc. In the present study, SCAR markers were developed for both genuine medicinal herbs used in indigenous systems of medicine and their adulterants. Further, they were validated and then used to evaluate the market samples of selected indigenous drugs for the presence/absence of adulterants and the amount in which the adulterants were mixed in the genuine drugs. The protocol was also simplified by eliminating some of the steps so that it could become less costly and user friendly, so that industries and government agencies may use it to control the quality of crude materials and manufactured herbal medicines. The limitation of this technique, however, includes its inability to identify the plant tissue/organ and the amount of active constituent(s) present in the processed single and compound formulations of indigenous medicines. The prediction of the presence of the desired tissue/organ and the concentration of active phytochemicals may be required for the quality control of the manufactured indigenous medicines. Development of SCAR markers that can correlate DNA fingerprinting data with the presence/absence of desired tissue/organ and the quantity of active ingredient and/or phytochemical constituents associated with the specific medicinal herb/(s) would have extensive applications in quality control of both the raw materials to manufacture indigenous drugs and also the processed drugs. These designed SCAR markers would act as qualitative/quantitative diagnostic tools for identification of genuine medicinal herbs from the harvesting stage to the finished product. Plant breeders can further use SCAR markers developed for a specific trait for the improvement of therapeutic efficacy of medicinal herbs and their conservation. Once these SCAR markers are developed for the genuine medicinal herbs and their adulterants, they can also be used to detect adulteration in the polyherbal formulations (herbal pastes, syrups, capsules or tablets) containing these herbs as their medicinal components. It will be a great step towards public welfare as well as the betterment of the indigenous systems of medicine. If these problems are worked out, this technique would be a prodigious step towards...
maintaining the therapeutic efficacy of traditional drugs used in the indigenous systems of medicines, making it a precise tool to be used by the pharmaceutical companies and government monitoring agencies for quality assurance of indigenous drugs of herbal as well as animal origin.