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EXTRACTION AND ISOLATION OF NATURAL PRODUCTS OF DRIMIA SPECIES FROM ALGERIA

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ABSTRACT

Drimia Species includes plants that used from ancient time for various ailments such as dropsy, respiratoryailment, bone and joint complications, skin disorders, pilepsy and cancer. Bufadienolides have been identified as the main constituents in the genus of *Drimia*. Phenolics, sterols, protein and some of other phytochemicals have been also isolated from the bulb of these plants. Pharmacological and clinical studies have strongly approved their effect on cardiovascular system. Extracts and compounds isolated from *Drimia* species showed biological activities such as antibacterial, antifungal, antiviral, antioxidant, anti inflammatory. The aim of this study was to isolate and purify compounds of flowers extract of this plant using chromatographic methods. This separation gives three compounds, their structure we will be characterized using spectroscopic methods (NMR, UV, IR, …..).

Introduction

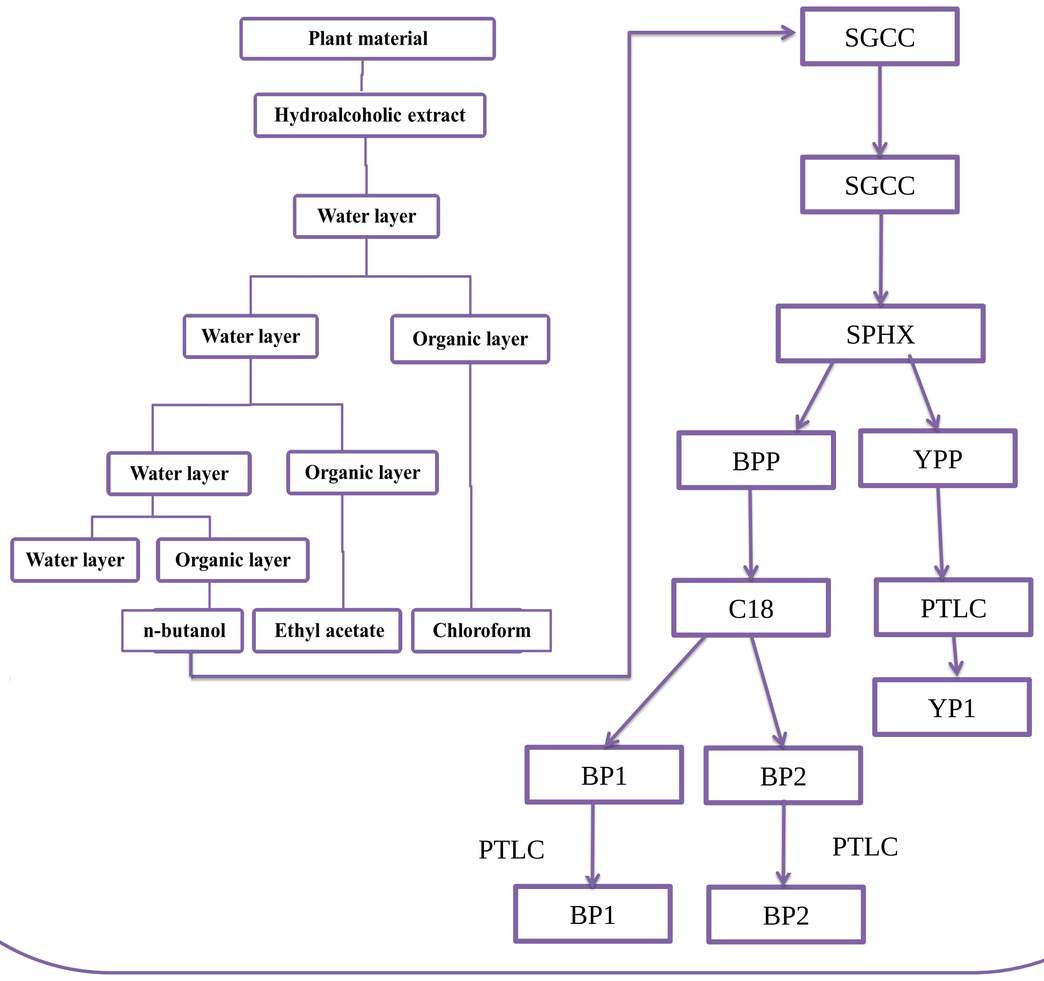
Drimia Species is a native plant found in the Mediterranean area, North Africa and India [1]. It is used as a cardiotonic diuretic for the treatment of cardiac marasmus and oedema [2]. It is also used in bronchitis, bronchial asthma, whooping cough and cancer. Externally, the bulb is applied for skin problems such as injury, haemorrhoids, warts, dandruff and seborrhoea [3]. It exhibits insecticidal and cytotoxic effects [4]. Previous phytochemical studies of D. maritima bulbs resulted in the isolation of cardiac glycosides, anthocyanins, lignans, flavonoids, fatty acids [5]. The aim of this study was to isolate and purify compounds of flowers extract of this plant using chromatographic methods.

Materials and Methods

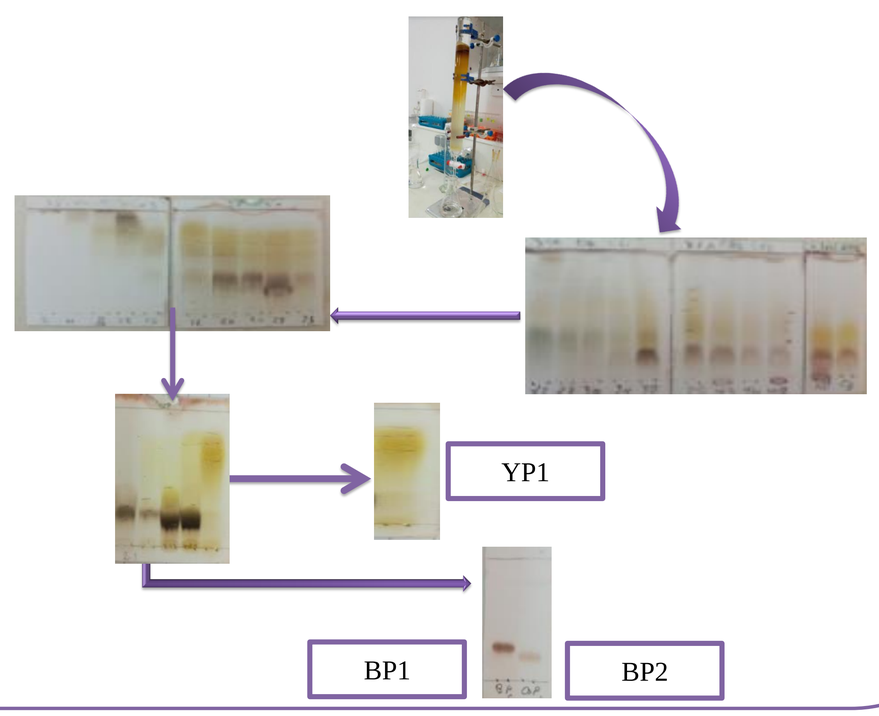
Plant material

The plant flowers of *Drimia maritima* L. were collected in Algeria.

Extraction and isolation



Results



DISCUSSIONS

The crude extract then underwent a succession of liquid liquid partition extractions using **$CHCl_3$**, EtOAc and n-BuOH to obtain partitions P-1 (H2O,), P-2 ($CHCl_3$), P-3 (EtOAc) and P-4 (n-BuOH). The n-BuOH fraction was subjected to silica gel DCC twice using $CHCl_3$–MeOH gradients, the tubes from 24 to 45, the latter were collected subjected to sephadex using $CHCl_3$–MeOH (YPP,BPP), the YPP was subjected to PTLC (YP1) and the BPP was subjected to C18 using H20–MeOH (BP1,BP2)

Conclusion

Since natural products from plant extracts usually contain various component mixtures with different polarities, their separation creates a big challenge for the process of identification and characterization. In the future we will be characterized the structure of isolation compounds using spectroscopic methods.

REFERENCES

1- Boulos L. 2002. Flora of Egypt. Vol. 2. Cairo: Al Hadara Publishing; p. 359–360.

2- Metin M, Bu¨ru¨n B. 2010. Effects of the high doses of Urginea maritima (L.) Baker extract on chromosomes. Caryologia. 63:367–375.

3- Bown D. 1995. Encyclopedia of herbs and their uses. London: Dorling Kindersley, ISBN 0-7513-020-31.

4- Bozcuk H,O¨ zdog˘an M, Aykurt O, Topc uog˘lu F,O¨ ztu¨rk H, Ekinci D, Karadeniz A, Mutlu A, Burgucu D. 2011. Urginea maritima (L.) Baker (Liliaceae) extract induces more cytotoxicity than standard chemotherapeutics in the A549 non-small cell lung cancer (NSCLC) cell line. Turk J Med Sci. 41:101–108.

5-El-Seedia HR, Burmana R, Mansour A, Turki Z, Boulos L, Gullbo J, Go¨ransson U. 2013. The traditional medical uses and cytotoxic activities of sixty-one Egyptian plants: discovery of an active cardiac glycoside from Urginea maritima. J Ethnopharmacol. 145:746–757.