



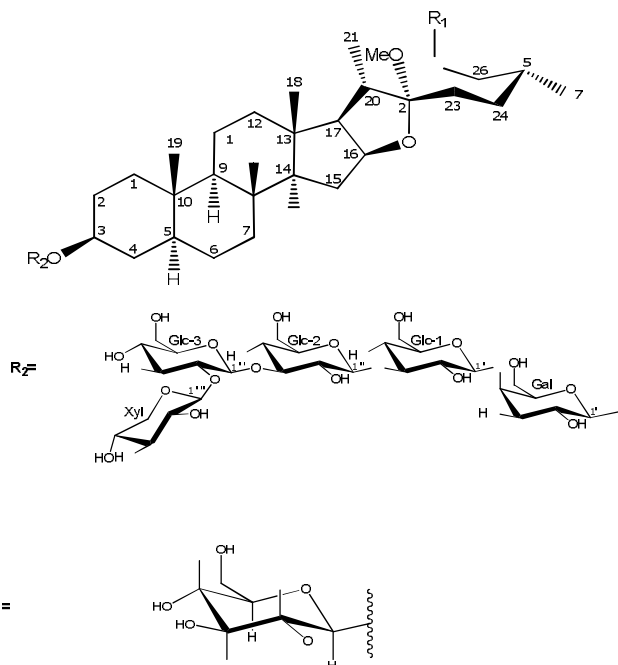
كلية الزراعة

قسم الكيمياء الحيوية



جامعة الفيوم

## A new steroidal saponin desmettianoside C with molluscicidal activity from *Yucca desmettiana*



Chemical structure of compound (desmettianoside C)

### Abstract

In continuation of our work to find out new potent and safer molluscicides for controlling schistosomiasis snail vector, *Biomphalaria alexandrina*, bioassay guided separation of aqueous methanolic extract of *Yucca desmettiana* leaves by using chromatographic methods yielded a new molluscicidal saponin compound (56 mg). This compound was in part responsible for the molluscicidal activity of the aqueous suspension of *Y. desmettiana* leaves which exhibited high molluscicidal activity against *B. alexandrina* snails with  $LC_{100}$  value of  $9 \pm 0.4$  mg/l. The structure of the new compound was identified as (25R)-26-O- $\beta$ -D-glucopyranosyl-22 $\alpha$ -methoxy-5 $\alpha$ -furostan-3 $\beta$ -26-diol 3-O[ $\beta$ -D-xylopyranosyl (1 $\rightarrow$ 2)- $\beta$ -D-glucopyranosyl (1 $\rightarrow$ 3)-  $\beta$ -D-glucopyranosyl (1 $\rightarrow$ 3)-  $\beta$ -D-glucopyranosyl (1 $\rightarrow$ 4)-  $\beta$ -D-galactopyranoside and designated as desmettianoside C. The chemical structure of the isolated active compound was characterized by using spectroscopic analysis of NMR ( $^1H$ ,  $^{13}C$ , TOCSY, COSY, HSQC and HMBC) and MS data.