

## SHORT COMMUNICATIONS

## SPERMICIDAL ACTIVITY OF STEROIDAL AND TRITERPENIC GLYCOSIDES

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SAPONINS are known to be active against human spermatozoa<sup>1</sup> and CONSAP cream with triterpenic glycosides from *Sapindus mukorossi* as active constituents has reached clinical trial as male contraceptive<sup>2</sup>. We have investigated seven steroidal and three triterpenic glycosides from different plant resources for their spermicidal potential by methods reported earlier<sup>1,3</sup>.

The results are summarized in table 1. In general, the steroidal glycosides are inactive or have less activity (compounds II, III, V and VII). Hecogenin-based glycosides caused 100% immobilization of human spermatozoa at 0.5% level. Their activity may be attributed to the presence of 12-oxo group since compound V with identical sugar chain to compound IV is inactive. Triterpenic glycosides from *Hedera nepalensis* showed promising activity at lower concentrations. An increase in the degree of

hydrophilicity (VIII → X) increases the activity.

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Table 1 Results of spermicidal test (observation after 5 s) against human spermatozoa

Plant	Part	Compound	Conc. (%)	Activity
<i>Asparagus plumosus</i>	Roots <sup>4</sup>	rha $\xrightarrow{2}$ glu — <sup>3</sup> yamo (I)	1	+
<i>Agave cantala</i>	Rhizomes <sup>5,6</sup>	rha — <sup>2</sup> glu — <sup>3</sup> yamo (II)	1	—
		glu — <sup>3</sup> hong <sup>23</sup> — glu (III)	1	—
		glu — <sup>3</sup> glu $\xrightarrow{2}$ gal — <sup>3</sup> heco (IV)	0.5	+
		glu — <sup>3</sup> glu $\xrightarrow{2}$ gal — <sup>3</sup> heco (V)	1	—
<i>Agave americana</i>	Rhizomes <sup>7</sup>	glu — <sup>3</sup> glu — <sup>2</sup> glu — <sup>3</sup> heco (VI)	0.5	+
		1 rha + 2 xyl + 2 glu + 1 gal + tigo (VIII)	1.5	+
<i>Hedera nepalensis</i>	Inflorescence <sup>8</sup>	ara — <sup>3</sup> hedera (VII)	0.5	+
		rha — <sup>2</sup> ara — <sup>3</sup> hedera (IX)	0.25	+
		2 glu + 1 rha (compound IX) (X)	0.125	+

+, active; —, inactive; rha, rhamnose; glu, glucose; xyl, xylose; gal, galactose; ara, arabinose; yamo, yamogenin; hong, honguangenin; heco, hecogenin; tigo, tigogenin; hedera, hederagenin.