

FENUSTEROLS®

In Sports Nutrition

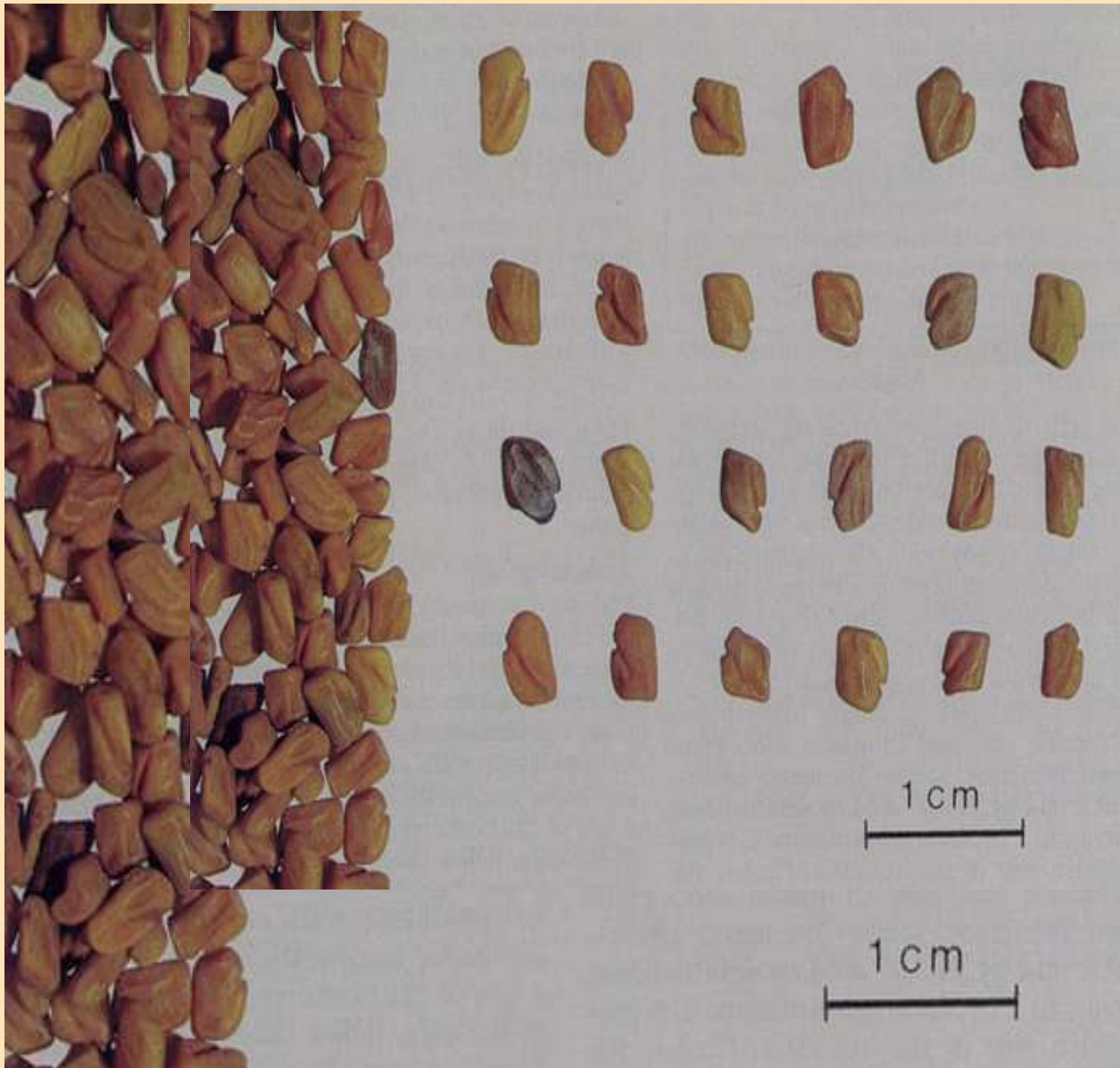
Sabinsa Corporation

DESCRIPTION

Fenusterols® is the saponin rich fraction obtained from **Fenugreek** seeds.

Botanical Name : *Trigonella foenum-graecum*,

Family: Leguminosae



**Fenugreek
seeds**

Sabinsa Corporation

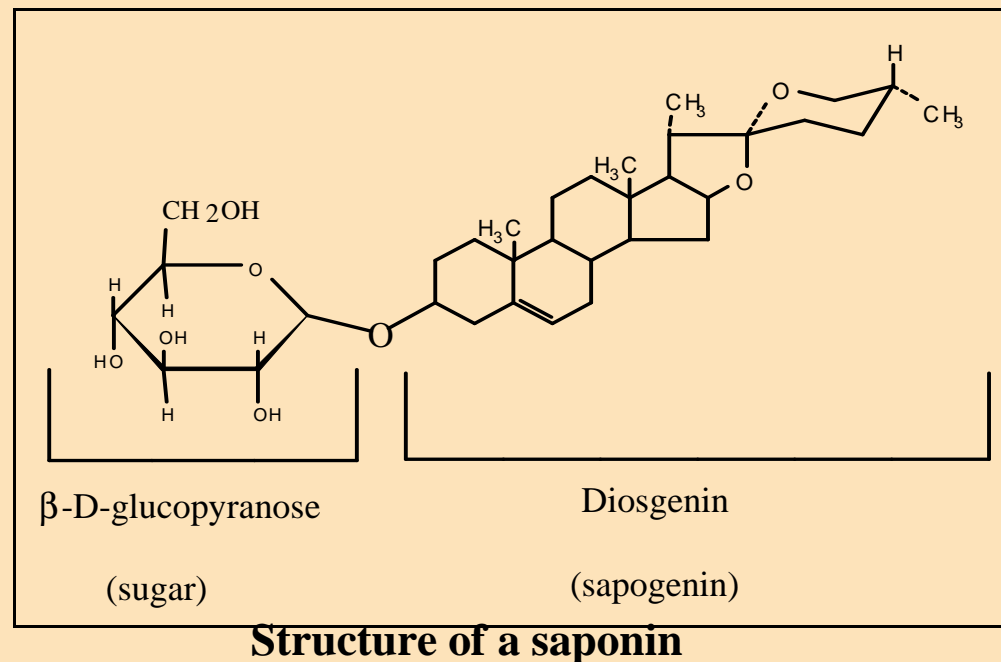
SAPONINS : DEFINITION

Saponins are complex glycosidic compounds present in a diverse array of edible and inedible plants

Each saponin consists of a **sapogenin** which constitutes the aglycon moiety of the molecule, and a **sugar**.

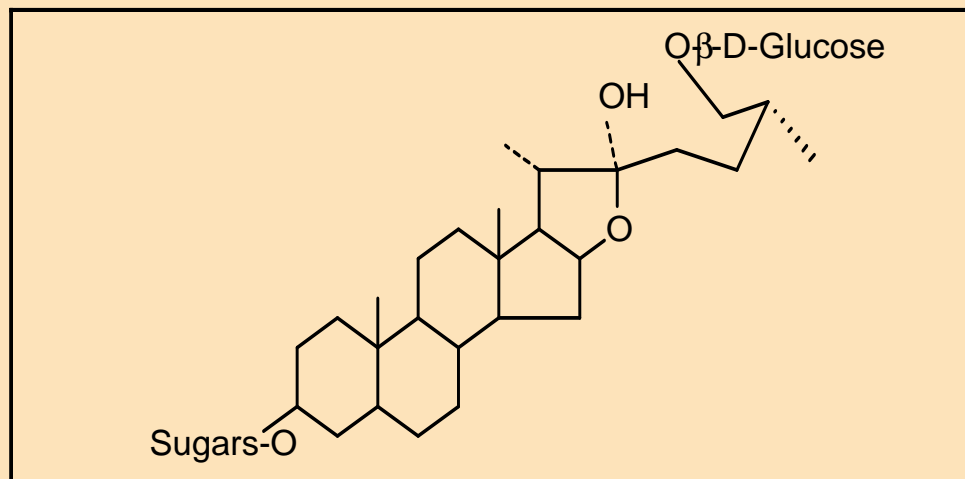
The **sapogenin** may be a **steroid or a triterpene**

and the **sugar** moiety may be **glucose, galactose, pentose or a methyl pentose**



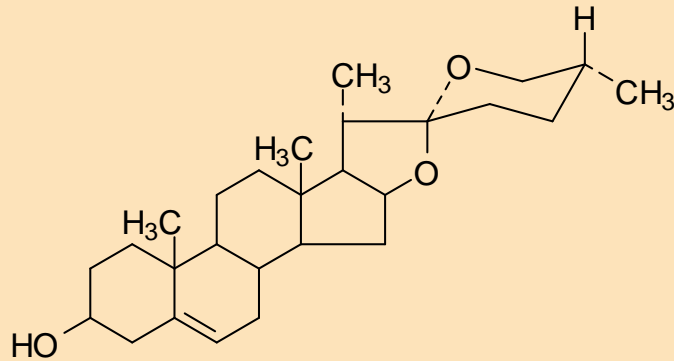
THE STEROIDAL SAPONINS IN FENUGREEK

Fenugreek seeds contain saponins in the form of furostanol saponins.

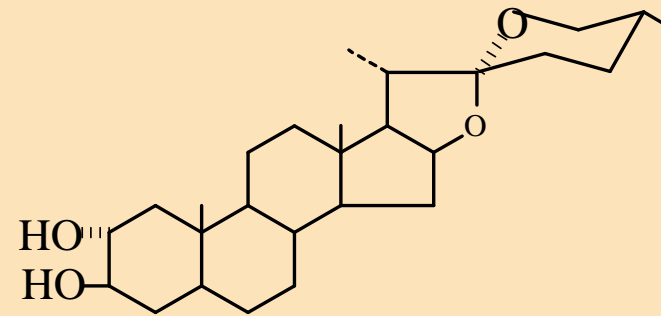


Chemical Structure of Furostanol Saponins

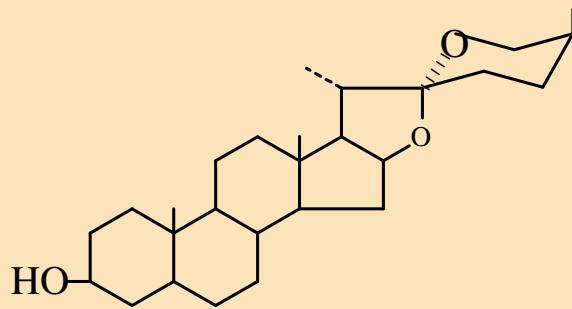
SOME FENUGREEK SAPOGENINS



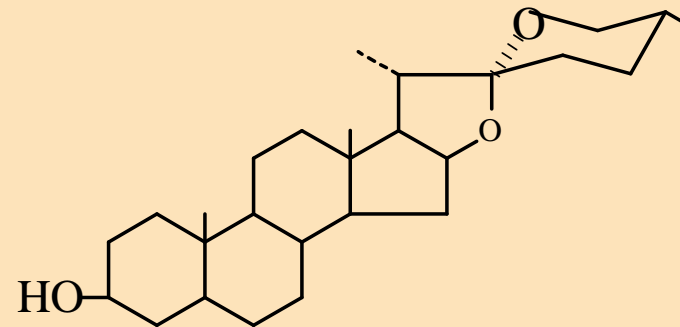
Diosgenin



Gitogenin



Sarsapogenin



Smilagenin

SAPONINS AND SPORTS NUTRITION

- ◆ **In a clinical study, a preparation rich in furostanol saponins was shown to possess immunostimulating and leutinizing hormone releasing properties. The furostanols preparation also increased testosterone levels and spermatogenesis¹**
- ◆ **Testosterone is known to play a key role in sperm cell production and immune functions and is often used to increase fertility and recovery.**
- ◆ **From a sports nutrition point of view, furostanol saponins are particularly promising since increased testosterone levels increase the deposition of protein in the muscles, leading to increased muscle mass and strength².**

1. *Literature on Tribestan®*, a furostanol-rich preparation from *Tribulus terrestris*, Pharmachim's Chemical Pharmaceutical Research Institute, Sofia, Bulgaria.

2. Bhasin, S. et al. (1996). *New England Journal of Medicine*, 335:1-7.

EFFECT OF FENUGREEK STEROID SAPONIN TREATMENT ON RUNNING SPEED IN NORMAL RATS

- ◆ **8 animals were used in each set of experiments, to assess appetite increase in terms of running speed towards feed.**
- ◆ **A significant increase in running speed was observed in rats treated with fenugreek saponins at the level of 12.5 mg /day per 300 g body weight after two weeks.**

EFFECT OF FENUGREEK STEROID SAPONIN TREATMENT (12.5 mg/day per 300 g body wt) on running speed in normal rats

