

# Bioactive Saponins from *Astragalus suberi* L. Growing in Yemen

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From the aerial parts of *Astragalus suberi* L., Fabaceae, seven saponins were isolated. Based on spectral data (IR, <sup>1</sup>H and <sup>13</sup>C NMR and HR-FABMS), the structures were established as 3-*O*-(β-D-glucopyranosyl)-soyasapogenol B (**1**); 3-*O*-(β-D-glucuronopyranosyl)-soyasapogenol B (**2**); 3-*O*-[β-D-galactopyranosyl (1→2)-β-D-glucopyranosyl]-soyasapogenol B (**3**); 3-*O*-[α-L-rhamnopyranosyl (1→2)-β-D-galactopyranosyl (1→2)-β-D-glucopyranosyl]-soyasapogenol B (**4**); 3-*O*-[α-L-rhamnopyranosyl (1→2)-β-D-galactopyranosyl (1→2)-β-D-glucopyranosyl]-11-hydroxy-soyasapogenol B (**5**); 3-*O*-[α-L-rhamnopyranosyl (1→2)-β-D-galactopyranosyl (1→2)-β-D-glucuronopyranosyl]-soyasapogenol B (**6**) and 3-*O*-[α-L-rhamnopyranosyl (1→2)-β-D-galactopyranosyl (1→2)-β-D-glucuronopyranosyl]-complogenin (**7**).

The isolated saponins exhibited antibacterial activities against Gram-positive and Gram-negative bacteria with minimum inhibitory concentration values > 100 μg/ml, antifungal activity against all the strains tested with minimum fungicidal concentration values between 25 and 50 μg/ml and inhibited the growth of Hep-2 (human carcinoma of larynx), with IC<sub>50</sub> values between 50 μg/ml (compounds **5–7**) and 100 μg/ml (compounds **1–4**), and Hela (human carcinoma of cervix) cell lines in culture with different IC<sub>50</sub> values [74 (compound **7**), 98 (compound **5**) and 180 μg/ml (compounds **1–4** and **6**)].

**Key words:** *Astragalus suberi* L., Triterpenoidal Saponins, Biological Activity