

## **GYPSOPHILA GENUS: A RICH SOURCE OF SAPONIN TRIGGERS TOXICITY ENHANCING PROPERTIES ON SAPORIN A TYPE-I RIP**

Idris Arslan, Ali Celik

Pamukkale University, Biology Department, Denizli, Turkey; iarslan@pau.edu.tr

Saponins are a widespread class of natural compounds found in a lot of plant species. Saponins consist of a hydrophobic triterpenoidal C30 or steroidal C27 backbone and one or two hydrophilic glycoside moieties attached to the backbone. Due to this structural composition, saponins are amphiphilic glycoconjugates which give soap-like foams in water. Analysis of saponin compounds, however, can be quite compelling due to such factors as their complexity, amphiphilic structure, lack of strong chromophores and prone to form un-

der-ground parts from *Gypsophila* species are an especially rich source of triterpene saponins. They are exploited commercially for a variety of purposes including medicines, detergents, adjuvants and cosmetics. The most common basic structures of saponins isolated from *Gypsophila* genus are mainly gypsogenin but also in fewer amounts gypsogenic acid and quillaic acid. Also, saponins with an aldehyde function at C-4 from *Gypsophila pilulifera* exhibited cytotoxic activity against human cancer cell line. The function of saponins in plants is not completely elucidated but there is strong evidence that they act as defense compounds against fungal pathogens' attack. In addition, many plant saponins have been isolated and present a broad spectrum of biological uses, such as anti-cancer, anti-inflammatory, ion channel blocking, immune stimulating, antifungal, antithrombotic and hypocholesterolemic property. *Gypsophila* saponins are of interest in terms of their applications in vaccines.

**Key Words:** Gypsophila, triterpene saponin, cytotoxicity, saporin.