

〈一般論文〉

キラヤ (*Quillaja saponaria* Molina) サポニン水溶液の  
泡物性に対する多価アルコールおよび無機電解質の影響

堀内照夫<sup>1</sup>, 烏家圭悟<sup>\*,2</sup>, 中原達雄<sup>2</sup>

**Effect of Polyols and Inorganic Salts on Foam Properties of the Saponins  
from *Quillaja saponaria* Molina in Aqueous Solution**

Teruo HORIUCHI<sup>1</sup>, Keigo TOYA<sup>\*,2</sup>, Tatsuo NAKAHARA<sup>2</sup>

(Accepted: August 4, 2014)

**Abstract**

Effect of chemical structure of polyols and lyotropic series of inorganic salts on foam properties for saponins from *Quillaja saponaria* Molina (QSM) in aqueous solution was studied. Inorganic/organic balance (IOB), calculated by the organic conceptual diagram, was used as an index value for various polyols. The foam height of QSM in aqueous solution showed a maximum at the IOB value=2.5, while the foam height was decreased before and after IOB value=2.5. On the other hand, the foam height of SDS in aqueous solution was increased in the region of the IOB value=1.6–2.4, as the IOB value increases, and the foam height was kept constant above the IOB value=2.4. Lyotropic series were used on the characteristics of the inorganic salts. The foam height for QSM in aqueous solution was constant without being affected by lyotropic series of inorganic salts. On the other hand, the foam height of SDS in aqueous solution was reduced as the lyotropic series of inorganic salts becomes smaller. Furthermore, the foam stability of QSM and SDS in aqueous solution was discussed in terms of the reduction of surface tension in the presence of these additives.

**Key words:** Saponins from *Quillaja saponaria* Molina (QSM), Inorganic/organic balance (IOB), polyol, inorganic salt, surface tension.