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Comparison of valerenic acids and valepotriates production between cultivated roots and bioreactor cultured roots of *Valeriana fauriei*

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Objectives

The aim of this work was to compare valepotriates and valerenic acids production between cultivated roots and bioreactor cultured roots of *Valeriana fauriei*.

Materials and Methods

1. Material

Bioreactor cultured *V. fauriei* roots harvested after 4 weeks of culture.

Field cultivated roots of *V. fauriei* were collected in October 2004 from damyang, South Korea.

2. Methods

Roots of *V. fauriei* was cultured in 3L glass balloon type bubble bioreactors containing 2L of MS (Murashige and Skoog, 1962) medium containing 30 g/L sucrose and the pH was adjusted to 5.7.

Inoculum was 20g and the air volume was adjusted with an air flow meter to give a constant flow rate of 0.2 vvm.

Valerenic acids and valepotriates content were analysis by PDA-HPLC and detection wavelength was 220nm for valerenic acids and 254nm for valepotriates.

Results and Discussion

1. 2.41-fold multiplication rate increase obtained in MS medium without plant growth regulators after 4 weeks of culture and the dry weight was 1.70g/L.
2. The content of hydroxyvalerenic acid was higher in MS medium cultured roots than in field cultivated roots and the content were 0.146% and 0.086%, respectively.
3. The content of acevaltrate was higher in MS medium cultured roots than in field cultivated roots and the content were 0.324% and 0.012%, respectively.
4. The content of valerenic acid was higher in field cultivated roots than MS medium cultured roots and the content were 1.337% and 0.225%, respectively.
5. The content of acetoxyvalerenic acid was higher in field cultivated roots than MS medium cultured roots and the content were 0.069% and 0.03%, respectively.