P41

Solubilization of Hydroxy Apatite by *Klebsiella* sp. DA71-1 and Effect of Amino acids solution

Chin-Woo Lee, Youn-Ju Jung, Ok-Ryul Song, Ju-Soon Yoo, Soo-Yeol Chung[1] and Yong-Lark Choi

Department of Biotechnology, Faculty of Natural Resources and Life Science, Dong-A University, Busan, Korea,
[1]Dept. of Food Science & Nutrition, Dongju College, Busan, Korea.

A mineral phosphate solubilizing bacterium, *Klebsiella* sp. DA71-1 has been isolated from cultivated soils. The strain was identified as *Klebsiella* sp. DA71-1, based on the physiological and biochemical. The MPS (mineral phosphate solubilizing) conditions of *Klebsiella* sp. DA71-1, were studies in our laboratory to determine the optimal conditions. When 3% of glucose concentration was used as carbon source, the strain had a marked mineral phosphate solubilizing activity. Mineral phosphate solubilization was directly related to the pH drop by the strain. The optimal temperature and initial pH to solubilize insoluble phosphate in sucrose minimal medium were 30℃ and pH 6.0, respectively. In these conditions phosphate solubilizing of *Klebsiella* sp. DA71-1 against three types of insoluble phosphate like Tri-calcium phosphate, Aluminium phosphate, Hydroxy apatite were quantitatively determined. The highest phosphorus concentration indicated in Hydroxy apatite. We determined the MPS pattern of *Klebsiella* sp. DA71-1 in liquid cultures the contained amounts of Amino acid solution. It analytically measured the levels of P in the medium at different points of 6-day growth period at different contentration of amino acid solution. P-solubilizing ability was increased with concentration of amino acid solution in *Klebsiella* sp. DA71-1 The ability of the strain to solubilize mineral phosphate in 1% amino acid solution medium was increased at a high level up to 4 days.