

# Functional Properties of Propolis in Natural Products

Seung Kwan Han, Jang Won Lee \* , Sook Young Lee \*

Biotechnology Research Institute, Dept. of Animal Science,  
Chonnam National University

\* Medicinal Plant Seed Bank, BIC, Dongshin University

## Utilization for function property of plants

Plants are an important source of food for many animals, such as insects, snails, and many vertebrates, because of their protein and carbohydrate content. Since plants cannot run away, they have had to evolve strategies, that make them indigestible or poisonous, to protect themselves from being eaten. In addition to *primary metabolites*, such as carbohydrates, amino acids, fatty acids, cytochromes, chlorophylls, and metabolic intermediates of the anabolic and catabolic pathways, which occur in all plants and where they all have the same metabolic functions, plants also contain a large variety of substances, named *secondary metabolites*, with no apparent direct metabolic function. Certain secondary metabolics are restricted to a few plant species, where they fulfil specific ecological functions, such as attracting insects to transfer pollen, or animals to consume fruits and in this way to distribute seed, and last, but not least, to act as *natural pesticides*.

Plant agricultural production is the basis for human nutrition. Plant gene technology, which can be regarded as a section of plant biochemistry, makes a contribution to combating the impending global food shortage due to the enormous growth of the world population. The use of environmentally compatible herbicides and protection against viral or fungal infestation by means of gene technology is of great economical importance. Plant biochemistry is also instrumental in breeding productive varieties of crop plants.

Plants are the source of important industrial raw material such as fat and starch, but they are also the basis for the production of pharmaceuticals. It is to be expected that in future gene technology will lead to the extensive use of plants as a means of producing sustainable raw material for industrial purpose.

Recently, propolis is used variously for healing disease and health food by many people, especially beekeepers in Korea. More people will use more propolis as a substitute medicine since it is known that a wide variety of biological and pharmacological activities and functional property.