

## **Herbal Extracts**

Herbal extract is an extraction of herb made in water and alcohol. It is strong medicinal dose of herbs. It consists of active ingredient of a particular herb. Extraction process is used to obtain the extract from the authenticated herb.

## **Alkaloids**

Alkaloids are a group of nitrogen-containing bases. Alkaloids were among the earliest isolated pure compounds with biological activity. Alkaloids have diverse and important physiological effects on humans and other animals. Among the most famous of the alkaloids are the Solanaceae or tropane alkaloids, quinine extracted from *Cinchona succirubra*, and morphine alkaloids, derived from the opium poppy, *Papaver somniferum*. Many alkaloids are poisonous in nature, some are used medicinally as analgesics (pain relievers) or anaesthetics and for other uses.

## **Amino acids**

Amino acids are very small biomolecules and consist of two functional groups i.e. amino group and carboxyl acid group. They are the major building blocks of proteins and enzymes. They act as intermediates in metabolism and help in growth, repair and maintenance of cells and tissues.

## **Bitter**

Bitter are the beverages in which water or alcohol is used to dissolve or blend the medicinally components from the plant materials. The plant containing bitters reflectively induce stimulation on the salivary gland and secretion of the gastric juice, thus Bitters are used to strengthen and improve the whole digestive system as well as the nervous system. Bitter shows broad effect on the body i.e. on physiology, and tone. It is beneficial for lowering lipid levels, gastrointestinal complaints, mineral metabolism and hair loss, however in western society, it is used by dietary supplement manufacturers for its weight loss properties.

## **Glycosides**

Glycosides are compounds containing a carbohydrate and a noncarbohydrate residue in the same molecule. An acetyl linkage at carbon atom 1 attaches the

carbohydrate residue to a noncarbohydrate or non sugar residue or AGLYCON. The nonsugar component is known as the AGLYCON. The sugar component is called the GLYCON. If the carbohydrate portion is glucose, the resulting compound is a Glucoside.

### **Mucilage**

Mucilage is naturally occurring gum or glutinous substance, comprised mainly of polysaccharides. It swells but does not dissolve in water and form a jelly like mass. Mucilage is secreted by various plant parts. It is the chief constituent of agar. It serves to check water loss, food storage and in the process of seed dispersal. Mucilage is edible, and has got wide application as an emollient, adhesive or a demulcent in cough syrups and in others medicines. *Ulmus rubra*, is a typical mucilaginous herb.

### **Resins**

Plant resins are simply secretion of plants, obtain either from the entire plant or from specific parts of the plant. Resin is mainly consist of volatile terpenes, along with essential oils and gums in little amount. Resins are insoluble in water and soluble in alcohol. Plant resins used in many purposes such as varnishes, adhesives, as an important raw material for organic synthesis or for incense and perfume. Active components of a plant can be concentrated into the resinous extracts, greatly reducing the volume, and greatly reducing the amounts needed for effective use.

### **Saponins**

Saponins are natural surfactants, or detergents, found in many plants, especially certain desert plants. Saponins are glycosides of steroids with a distinctive foaming characteristic. Saponins have long been known to have strong biological activity. They consist of a polycyclic aglycone that is either a choline steroid or triterpenoid attached via C3 and an ether bond to a sugar side chain. The antifungal and antibacterial properties of saponins are important in cosmetic applications, in addition to their emollient effects.

### **Tannins**

Tannins are naturally occurring plant polyphenols. They are composed of a very diverse group of oligomers and polymers. Their main characteristic is to bind and precipitate proteins. Tannins are located mainly in the vacuoles or surface wax of the plants. It is mainly used in tanning animal hides into leather. Acacia catechu is an example of a plant having high tannin content.

### **Terpenes**

Terpenes are natural organic solvents widespread in nature. Terpenes are varied class of hydrocarbons with a basic unit of isoprene. It is biosynthesized by plants mainly conifers. These are antibacterial, antitumour, anti-inflammatory, expectorant, diuretic and sedative. It is used in pharmaceuticals and perfumeries.

### **Volatile Oil**

A substance of oily consistency and feel, derived from a plant and containing the volatile aroma compounds from plants. They are also known as essential or ethereal oils. A volatile oil evaporates when exposed to the air and thus is capable of distillation; it may also be obtained by expression or extraction; many volatile oil's, identical to or closely resembling the natural oil's, can be made synthetically. Volatile oils are used in medicine as stimulants, stomachaches, correctives, carminatives, in perfumes and cosmetics and for purposes of flavoring.