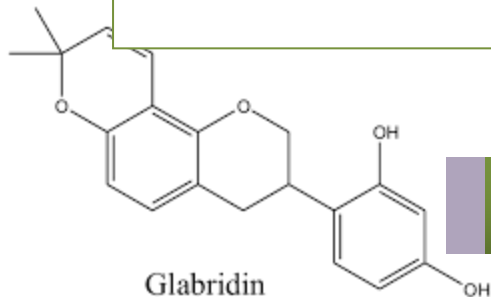


Licorice Extracts & Derivatives

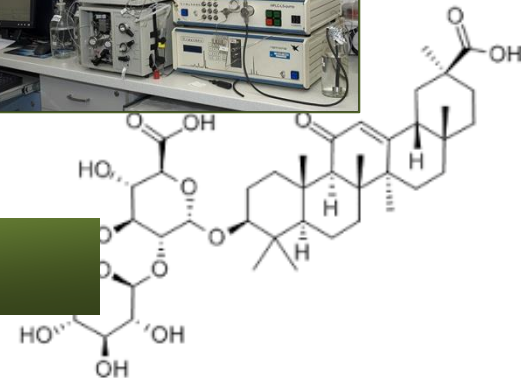


AHL Herbal Pharmaceuticals presents high quality licorice extracts & derivatives for Pharmaceuticals, Nutraceuticals, cosmaceuticals, tobacco & confectionary industry from high quality licorice roots from Afghanistan. Afghanistan has abundant supply of species of high quality licorice roots, where as *Glycyrrhiza glabra* seems to be the major species.

We are prime manufacturer of herbal extracts from Pakistan. Our manufacturing facility lies adjacent to raw material source, is equipped with modern manufacturing and analytical instrument (HPLC, UV, HPTLC, GC) and competent professionals to manufacture high quality licorice extract. Great care is taken to procure the best quality licorice roots and optimum process is adapted to ensure highest quality licorice extracts.

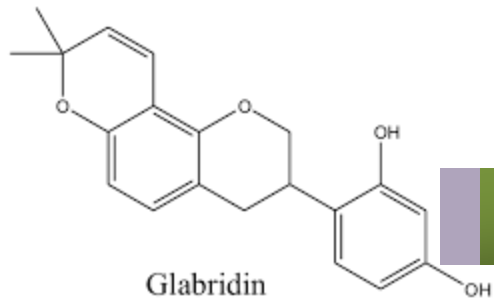


Licorice Extracts & Derivatives

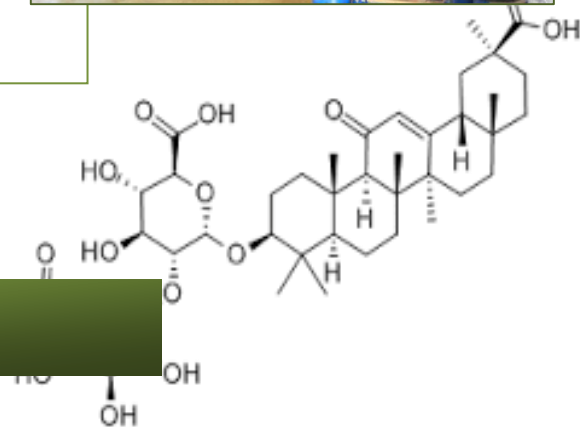




Name of Product	Specifications Available
Licorice Extract Paste GA	6-9 %
Licorice Extract Block GA	5-15%
DGL Deglycyrrhizinated Licorice	< 3%
Glycyrrhizic Acid	28%~30%,98%
(MAG) Monoammonium Glycyrrhizinate	65%,73%,98%
18-B Glycyrrhetic Acid	97%
Licorice Extract Glabridin	4-40%



Licorice Extracts & Derivatives





Licorice Extract Paste GA 6-9 %

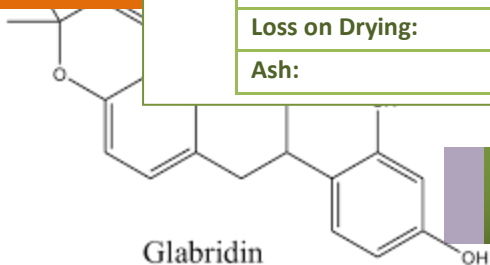
Licorice extract is made by extracting high quality licorice roots, separating and purifying extract and concentrating it. It has various pharmacological effects. It is used Food, beverages, nutraceuticals, pharmaceuticals, personal care products, cosmetics, oral health products, skin protection, animal and pet products.

Physical and chemical properties

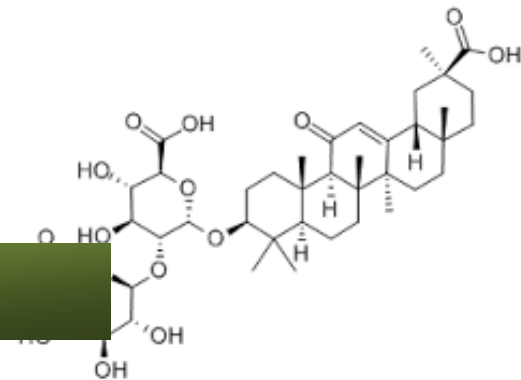
Physical state:	Brown Thick paste
Taste	Sweet, Characteristic
Solubility:	Soluble in water and hydro-alcohol solutions at recommended dosage levels; soluble in glycerin & propylene glycol, and low pH solution

Specified Analytical Values:

Glycyrrhizic Acid content:	2-15 %
liquiritin:	0.4-0.7 %
Glabridin:	0 - 4 %
Loss on Drying:	35-40 %
Ash:	7-10 %



Licorice Extracts & Derivatives





Licorice Extract Block GA 5-15%

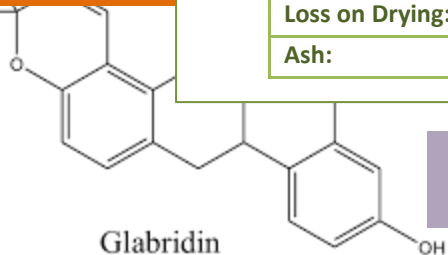
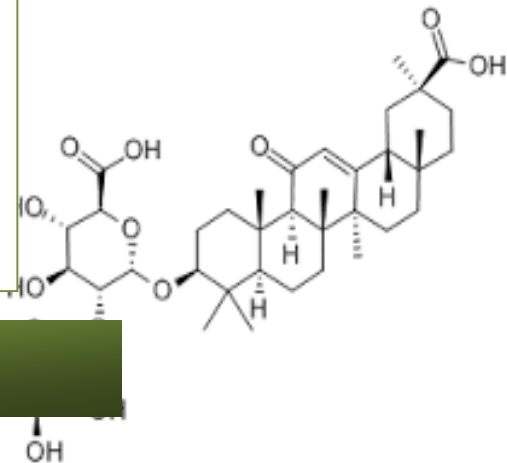
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Physical and chemical properties

Physical state:	Brown Waxy substance
Taste	Sweet, Characteristic
Solubility:	Soluble in water and hydro-alcohol solutions at recommended dosage levels; soluble in glycerin & propylene glycol, and low pH solution

Specified Analytical Values:

Glycyrrhizic Acid content:	02-13 %
liquiritin:	0.4-0.7 %
Glabridin:	0 - 4 %
Loss on Drying:	08-13 %
Ash:	7-10 %





Glycyrrhizic Acid 28%~30%,98%

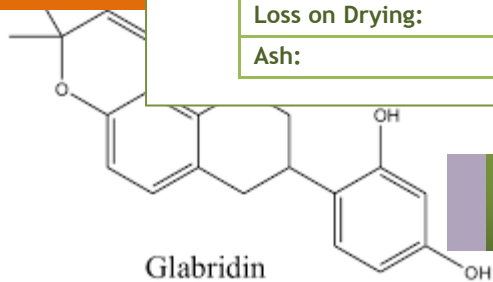
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Physical and chemical properties

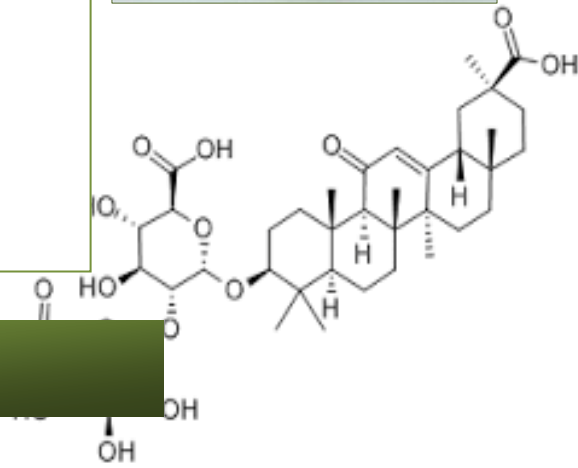
Physical state:	Light Brown to White powder
Taste	Sweet, Characteristic
Solubility:	Soluble in water and hydro-alcohol solutions at recommended dosage levels; soluble in glycerin & propylene glycol, and low pH solution

Specified Analytical Values:

Glycyrrhizic Acid content:	30 - 98.0 %
Loss on Drying:	2.5 %
Ash:	1 %



Licorice Extracts & Derivatives





DGL Deglycyrrhinated Licorice < 3%

Deglycyrrhinated licorice, (DGL) is typically used as an herbal supplement in the treatment of gastric and duodenal ulcers. It is made from licorice from which the glycyrrhizin has been removed. It has been said that some studies of DGL significantly reduced the size of gastric & duodenal ulcers, reduced recurrence and hastened healing.

Physical and chemical properties

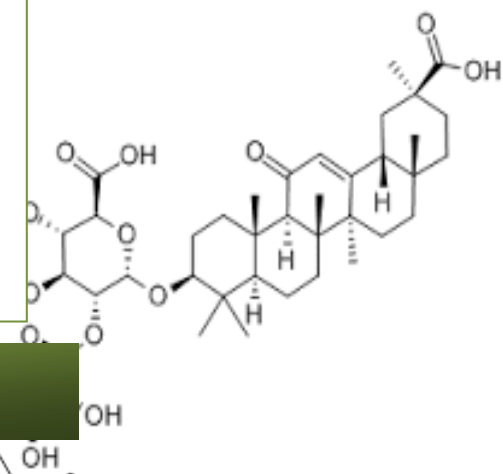
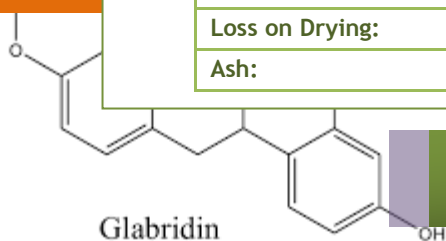
Physical state:	Brown powder
Taste	Sweet, Characteristic
Solubility:	Soluble in water and hydro-alcohol solutions at recommended dosage levels; soluble in glycerin & propylene glycol, and low pH solution

Specified Analytical Values:

Glycyrrhizic Acid content:	3 %
liquiritin:	0.4-0.7 %
Glabridin:	0 - 4 %
Loss on Drying:	3-5 %
Ash:	7-10 %



Licorice Extracts & Derivatives





(MAG) Monoammonium Glycyrrhizinate 65%,73%,98%

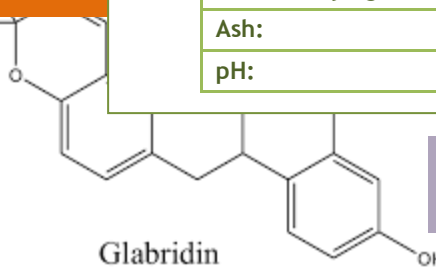
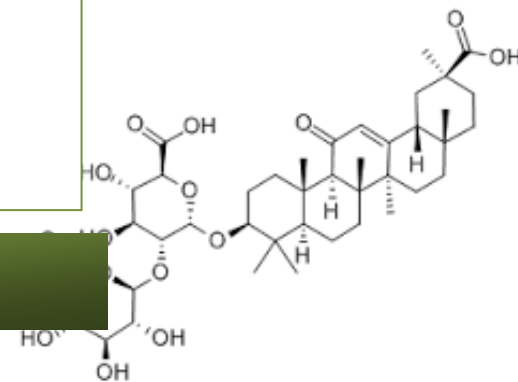
Monoammonium Glycyrrhizinate is an active ingredient which is extracted from licorice root. It has liver detoxification, restore liver cell {hepatocellular) function, prevent fatty changes to liver properties; Ammonium glycyrrhetate can promote the metabolism of bile pigment and detoxification, reduce collagen fiber hyperplasia, prevent cirrhosis, it is widely used in pharmaceutical, food and other industries.

Physical and chemical properties

Physical state:	White to off-white powder
Taste	Sweet, Characteristic
Solubility:	Soluble in water and hydro-alcohol solutions at recommended dosage levels; soluble in glycerin & propylene glycol, and low pH solution

Specified Analytical Values:

Glycyrrhizic Acid content:	98.0%
Loss on Drying:	2.5%
Ash:	0.1 %
pH:	4.2



Licorice Extracts & Derivatives



18-B Glycyrrhetic Acid 97%

Enoxolone (18 beta glycyrrhetic acid/licorice extract) is a major metabolite of glycyrrhizin, one of the main constituents of licorice. It is a pentacyclic triterpenoid derivative of the beta-amyrin type obtained from the hydrolysis of glycyrrhizic acid, which was obtained from the herb liquorice. It is anti-inflammatory, antibacterial Antineoplastic; a top-class cosmetic and as a sweetener, used in food industry.

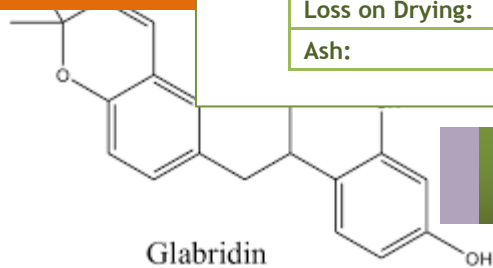
Physical and chemical properties

Physical state:	White to off-white powder
Taste:	Sweet, Characteristic
Solubility:	Soluble in ethanol, slightly soluble in petroleum ether; insoluble in water.

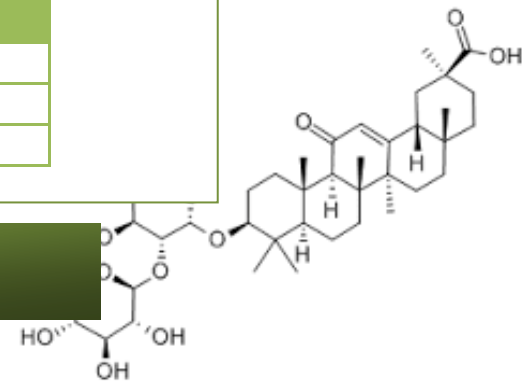


Specified Analytical Values:

Glycyrrhizic Acid content:	99.0%
Loss on Drying:	2.5%
Ash:	0.1 %



Licorice Extracts & Derivatives





Licorice Extract Glabridin 4-40%

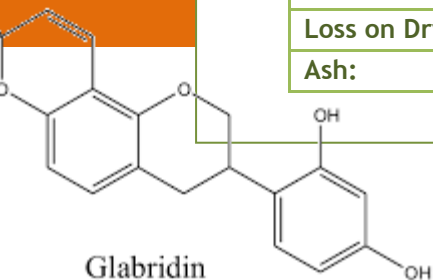
Glabridin is a potent, natural skin-whitening agent. It is known for its beneficial effects on the skin due to its anti-inflammatory and antioxidant properties. In addition, glabridin inhibits melanogenesis. Some researchers have established that this effect may be due to the inhibition of tyrosinase activity. Glabridin whitens skin without being cytotoxic (destruction of pigment cells Melanocytes).

Physical and chemical properties

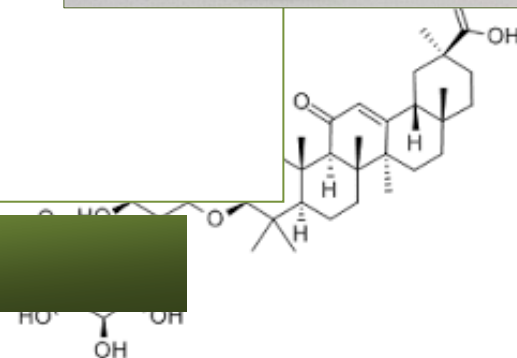
Physical state:	Yellowish-brown or reddish-brown powder
Taste :	Characteristic
Solubility:	Soluble in alcohol, Insoluble in cold and hot water.
Partical size	100 % through 80 mesh

Specified Analytical Values:

Glabridin content:	4.0-40 %
Loss on Drying:	3 %
Ash:	1 %



Licorice Extracts & Derivatives





Address: Plot No 3 PIBC Karachi
Pakistan.

Email: sales@ahlabspk.com,
ahlabspk@gmail.com.

<http://www.ahlabspk.com>

