Distribution: Khang., Mong-Dag., Khyang., Dor. Mong., Dund. Khalkh, Olon n., Ikh n., Dor. Gobi, Gobi-Alt., Alt. ovor., Zyyngar, Alash.

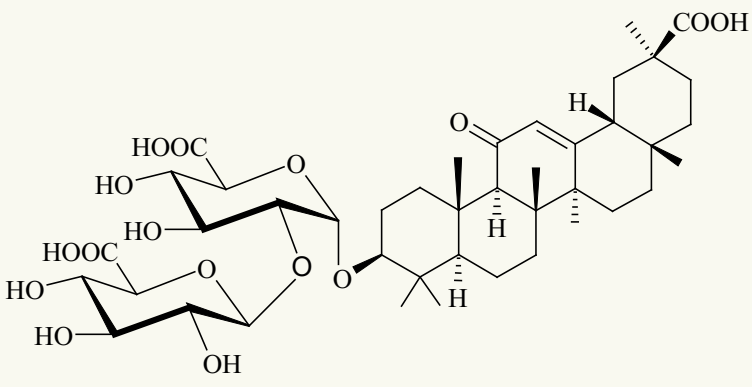
Habitat: Damp alkaline meadows, alkaline sands, sandy steppe, forb-grassy steppe, valleys of rivers and lakes, hummock fields [2–5].

Parts used: Root and rhizome

Traditional Uses: The taste is sweet and the potency is cool and liquid. It is used for the following: treating lung disease and throat illnesses caused by fever and thirst. Decrease fever, induces expectoration and fortifies the body. It is an ingredient of the following traditional prescriptions: Sorool-4, Aglig-4, Lish-6, Zandan-8, Uzem-7, Zachun-13, Banjingarvo-15, Dali-16, Lotsadgunsel, and Samfilnorov [5–9].

Microscopic characteristics: In transverse section of the root the cork is thick, brown, or purplish brown, formed of several layers of flattened polygonal thin-walled cells. Phloem are visible on the inner side of cortex and between medullary rays. Phloem fibres, very long, with very narrow lumen and strongly thickened stratified walls, which are cellulosic in the inner part of the phloem and slightly lignified in the outer. Fibres of parenchyma cells contain prisms of calcium oxalate. Pith, only rhizome dark yellow, parenchymatous; root no pith [10].

Chemical constituents: Root and rhizome contain polysaccharides [11–13], organic acids [13], triterpenoids: 4.9–22.2% glycyrrhizic acid [11,13,14], glyuranolide [3β,22α-dihydroxy-11-oxo-Δ12-oleanene-27α-methoxycarbonyl-29-oic acid (29,22α-)lactone] [15], 18α-glycyrrhizin, apioglycyrrhizin, araboglycyrrhizin, licorice-saponins A3, E2, G2, and H2 [16], coumarin [13,17], 7–9.46% tannins, 1.95–4% flavonoids [13]: quercetin [18], liquiritigenin, isoliquiritigenin [19], neoliquiritin, liquiritin, neoisoliquiritigenin, isoliquiritin [20], saxifragin [21], licoricone [22], vicenin-2 (apigenin-6,8-di-*C*-β-D-glucopyranoside), narcissin (isorhamnetin-3-*O*-rutinoside), nicotiflorin (kaempferol-3-*O*-rutinoside), astragalin (kaempferol-3-*O*-β-D-glucopyranoside), rutin (quercetin-3-*O*-rutinoside), isoquercitrin (quercetin-3-*O*-β-D-glucopyranoside) [23], uralene (6′-isoprenyl-3-methoxy-5,6,3′,4′-tetrahydroxy-flavone), uralenol-3-methyl ether (5′-isoprenyl-3-methoxy-5,7,3′,4′-tetrahydroxy-flavone) [18], gancaonin G, 5-*O*-methylglycryol, isoglycyrol, 6,8-diisoprenyl-5,7,4′-trihydroxyisoflavone [24], uralenol (5′-isoprenyl-3,5,7,3′,4′-pentahydroxy-flavone), neouralenol (2′-isoprenyl-3,6,7,3′,4′-pentahydroxy-flavone), uralenin (5′-isoprenyl-5,7,3′,4′-tetrahydroxy-flavonone), 6′-isoprenyl-3-methoxy-5,6,3′,4′-tetrahydroxy-flavone [25], licobichalcone [26], pterocarpenes: glycyrrhizol A and glycyrrhizol B [24].



Glycyrrhizic acid