Part used: Root

Traditional Uses: The taste is bitter and the potency is warm. It is used for the following: enhances vigour and power, has a sedative effect and enhances breathing. It is an ingredient of the following traditional prescriptions: Sugmel-7, Sojed, Braibu-17, and Banlag-37 [3–6].

Chemical constituents: Root contains 0.03–0.5% coumarins [7,8], sugars: glucose, galactose, arabinose, rhamnose [9], quinones: gracillisquinones A and B [10].

Qualitive and quantitative assays: Protein is determined by the titration method using 0.1 mol/l sulphuric acid as the titrant, and sugar is titrated with potassium permanganate. Pectins are determined by gravimetric analysis [11].

Qualitive and quantitative standards: Loss on drying, not more than 6.0%. Ash, not more than 4.9%. Matter, not more than 4.0%, of which mineral matter, not more than 1.5%. Stem and leaves of this plant, not more than 0.5%. Root of other plants, not more than 1.5%. Protein, not more than 12.0%. Sugar, not more than 47.6%. Pectin, not more than 7.8% [11].

Bioactivities: Antitumour [12] and antibacterial [7].

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