

## Zingiberis rhizoma

Ginger (BAN; BP 1988, BHP 1/1990)

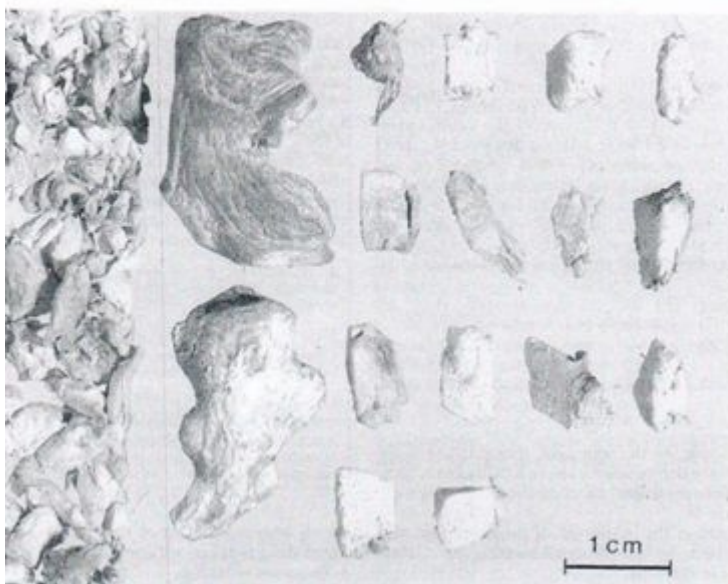


Fig. 1: Ginger

**Description:** The surfaces of the flattened pieces of rhizome, which branch in one plane, are peeled, leaving the remains of the cork along the narrow sides; the yellowish grey surface has fine longitudinal striations. In transverse section, there is a narrow cortex and a broad oval central stele; the vascular bundles project as short, rigid points.

**Odour:** Characteristic, aromatic.

**Taste:** Pungent and spicy.

Fig. 2: *Zingiber officinale* Roscoe

Tropical rhizomatous plant with linear-lanceolate leaves up to more than 20 cm in length. Long flowering stems with dense inflorescences, each flower being surrounded by bracts.



ÖAB: Radix Zingiberis  
Ph. Helv. VII: Zingiberis rhizoma  
DAB 6: Rhizoma Zingiberis

**Plant source:** *Zingiber officinale* Roscoe, ginger (Zingiberaceae).

**Synonyms:** Zingiber, Jamaica ginger, Ginger root or rhizome, Ingwer, Ingberwurzel (Ger.), Gingembre (Fr.).

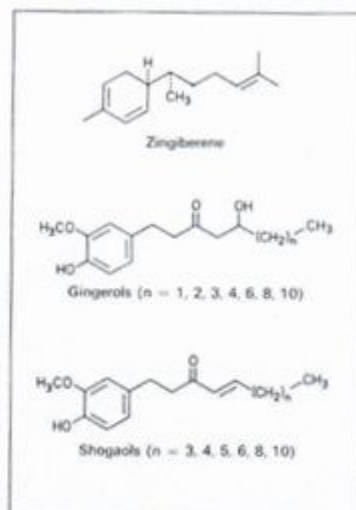
**Origin:** Cultivated in most tropical countries. There are many commercial varieties. What is considered to be the best (completely scraped) drug is that from Jamaica. Good quality (partially scraped) ginger for drug purposes also comes from Bengal and Australia. Up to 80% of present-day imports comes from China. Other parts of the world supply the drug, e.g. West Africa and South-East Asia. For further discussion of the available forms of ginger, see [6].

**Constituents:** 2.5–3% essential oil, the composition of which varies enormously according to the origin. Generally, but not always, sesquiterpenes predominate, e.g. (–)-zingerone.

giberene, *ar*-curcumene,  $\beta$ -bisabolone, and (*E*)- $\alpha$ -farnesene; the essential oil of Australian ginger contains mainly monoterpenes such as camphor,  $\beta$ -phellandrene, geranial, neral, and linalool, besides a small proportion of sesquiterpenes [1, 2]. Essential oil from dried Vietnamese ginger was found to consist of almost two-thirds monoterpenes (more oxygenated derivatives than hydrocarbons) and one-third sesquiterpenes (much more hydrocarbons than oxygenated derivatives); geranial (16%) was the main component and the overall composition was similar to that of a Sri Lankan variety [7]. The essential oil of fresh Japanese ginger contains mainly acyclic oxygenated monoterpenes such as neral, geraniol, geranial, and geranyl acetate; on storage, the neral/geranial content increases to ca. 60%, arising from the conversion of geranyl into successively geraniol, geranial, and neral [8]. The non-volatile pungent principles, the gingerols and shogaols, are phenylalkanones or phenylalkanonols with different chain lengths [1]; related compounds, such as [6]-gingerdiol and analogues, are also present [9]. Other diarylheptanoids, including the gingerones A-C, isogingerone B, and gingerdione, have been isolated [10, 11].

**Indications:** Chiefly as a spice, but also as a stomachic, tonic, and digestant in sub-acid gastritis, dyspepsia, and lack of appetite. Ginger stimulates the flow of saliva, raises the tonus of the intestinal musculature, and activates peristalsis.

Powdered ginger given in a dose of 2 g is a strong anti-emetic; it is said to be better than dimenhydrinate (Dramamine®), the therapeutic dose of which is 100 mg [3]. The gingerols and shogaols are responsible for the anti-emetic effects [13].



Some of the shogaols (phenylalkanonols) have been shown to have a cardiotoxic (positive inotropic) effect on the guinea-pig auricle [4].

About the inhibition of prostaglandin synthesis by the phenylalkanones, see: Galangae rhizoma.

In *folk medicine*, ginger is also in use as a carminative, expectorant, and astringent.

**Making the tea:** Not common, but boiling water can be poured over 0.5–1 g of the coarsely powdered drug and after 5 min. passed through a tea strainer.

*Extract from the German Commission E monograph (BANz no. 85, dated 05.05.1988)*

**Uses**

Dyspeptic complaints.  
Prevention of the symptoms of travel sickness

**Contraindications**

With gallstones, to be used only after consult with a doctor.

**Warning:** not to be used during morning sickness

**Side effects**

None known.

**Interactions with other remedies**

None known.

**Dosage**

Unless otherwise prescribed: average daily dose drug; preparations correspondingly.  
Externally: 100 g to a full bath; preparations correspondingly.

**Mode of administration**

Commuted drug and dry extracts for infants other galenical forms for internal use.

**Effects**

Anti-emetic, positively inotropic.  
Promotes salivary and gastric secretion, cholagey in animals, spasmolytic; in human beings, increas the tonus and peristalsis of the intestines.

As an anti-emetic, 2 g of the freshly prepared drug is taken with some fluid.  
1 Teaspoon = ca. 3 g.

**Phytomedicines:** The powdered drug or tracts prepared from it are present in Stomach Remedies. Zintona® capsules: anti-emetic.

Examples of products on the UK market: Potter's Indian Brandee (liquid) and Se

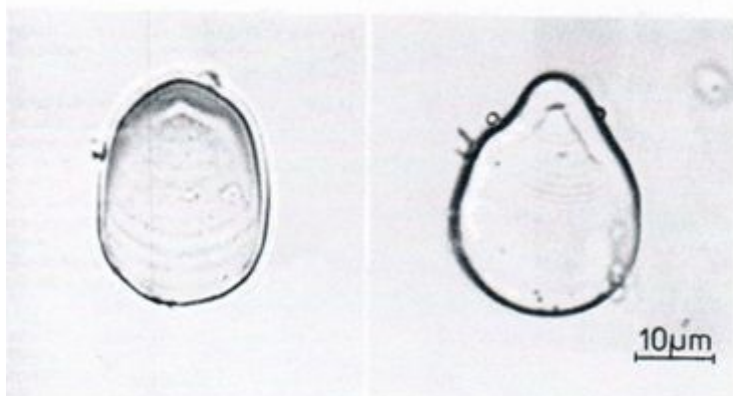


Fig. 3: Characteristic zingiberaceous starch. Large flattened grains with a markedly excentric hilum; some grains are teat- (or muller-) shaped (right).