

LAB-7
Microscopic Study
(Leaf Powder)

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PN: *Mentha piperita* (Mint, Peppermint, Nane)

DN: **Folia Menthae** (Mint leaf)

Fam: Labiatae (=Lamiaceae)

It is a herbaceous rhizomatous perennial plant that grows to be 30–90 cm tall, with smooth stems, **square in cross section**. The rhizomes are wide-spreading, fleshy, and bare fibrous roots. The leaves can be 4–9 cm long. They are dark green with reddish veins, and they have an acute apex and coarsely **toothed margins**. The flowers are purple, with a **four-lobed Corolla**, they are produced in **whorls (verticillasters)** around the stem, forming thick, blunt spikes. Flowering season lasts from mid to late summer.

Peppermint has a high **menthol** content. Fresh or dried peppermint leaves are often used alone or with other herbs in herbal teas. Peppermint also contains terpenoids and flavonoids such as eriocitrin, hesperidin and kaempferol 7-O-rutinoside.

Labiatae type glandular hair

Stoma contiguous cells

2-PN: *Atropa belladonna* (Deadly nightshade, Güzelavratotu)

DN: *Folia Belladonnae* (Deadly nightshade leaf)

Fam: Solanaceae

Solanaceae, native to Europe, North Africa, and Western Asia. Its distribution extends from Great Britain in the west to western Ukraine and the Iranian province of Gilan in the east. It is also naturalised and/or introduced in some parts of Canada and the United States. The foliage and berries are extremely toxic, containing tropane alkaloids. These toxins include atropine, scopolamine and hyoscyamine, which cause a bizarre delirium and hallucinations, and are also used as pharmaceutical anticholinergics.

Crystal sand

Stoma contiguous cells

Glandular hair

Glandular hair, stoma, Cuticle wrinkle, palisade parenchyma

3-Bitki Adı: *Hyoscyamus niger* (Henbane , Banotu)

Drog Adı: Folia Hyoscyami (Henbane leaf)

Familya: Solanaceae

Hyoscyamus niger is a **poisonous plant**.

It is annual, biannual or perennial herbaceous plants. The leaves are lobed, the flowers are a little zygomorphic, the calyx tube is 5 teeth and permanent. It is in the form of a **capsule (pyxidium)** with a fountain cap. Contains alcohols of **hyoscyamine** and **scopolamine**. There are calming and **sedative effects** due to scopolamine. It is used as a cigarette against the shortness of breath by mixing the leaves with tobacco.

Twin Crystals and Druses

Stoma and contiguous cells

4-PN:*Datura stramonium* (Devil's snare, Tatula)

DN: **Folia Stramonii** (Devil's snare leaf)

Fam: Solanaceae

Datura stramonium is a foul-smelling, erect, annual, freely branching herb that forms a bush up to 60 to 150 cm tall.

The root is long, thick, fibrous and white. The stem forks off repeatedly into branches, and each fork forms a leaf and a single, erect flowers.

The leaves are about 8 to 20 cm long, smooth, toothed, soft, and irregularly undulated. The upper surface of the leaves is a darker green, and the bottom is a light green.

The leaves have a bitter and nauseating taste, which is imparted to extracts of the herb, and remains even after the leaves have been dried.

The egg-shaped seed capsule is 3 to 8 cm in diameter and either covered with spines or bald. At maturity, it splits into four chambers, each with dozens of small, black seeds.

Datura has been used in traditional medicine to relieve asthma symptoms and as an analgesic during surgery. It is also a powerful hallucinogen. However, the tropane alkaloids responsible for both the medicinal and hallucinogenic properties are fatally toxic in only slightly higher amounts than the medicinal dosage, and careless use often results in hospitalizations and deaths.

Druse and simple crystals