

Melissa officinalis* L.*Lemon Balm Leaf***Melissae Folium**Lamiaceae*

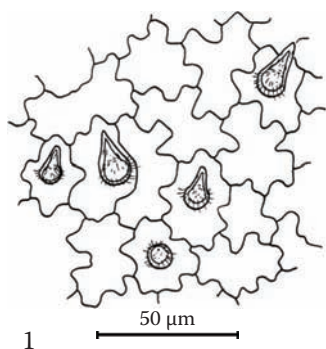
Lemon balm is a delicious lemony-tasting botanical that is widely used for colic, restlessness, teething, and fever in children. It is also used as a mood elevator, antidepressant, and relaxing diaphoretic in adults, among many other uses. In Europe, a balm made from the essential oil-rich leaves is also used topically as an antiviral for the treatment of oral herpes. Although the leaves of lemon balm are not readily subject to adulteration, whole-plant lemon balm may also be traded. This material would include fragments of stem and flowers.

Surface view: Upper epidermal cells have sinuous anticlinal walls and frequent, very short (to 30 μm long), unicellular, acute trichomes (papillae) with cuticular striations; stomata are absent; two types of glandular trichomes occur: (1) those up to 40 μm long, with a unicellular stalk and a uni- or bicellular roundish head; (2) those up to 60 μm long, with a conical basal stalk cell and two thin-walled, slightly elongated secretory cells in a row. Uniseriate covering trichomes with cuticular striations and of very differing lengths occur (approximately 200–1,500 μm); lower epidermal cells have sinuous

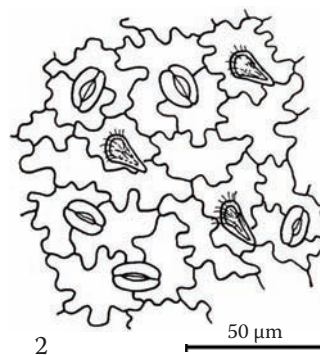
anticlinal walls and are smaller than upper epidermal cells; diacytic stomata up to 25 μm long are abundant and raised above the epidermal surface; uni- and bicellular covering trichomes with a warty cuticle and up to 50 μm long occur very frequently along veins and in the intercostal regions; uniseriate covering trichomes similar to, but slightly longer than, those on the upper surface occur more frequently on the lower surface; glandular trichomes similar to the two types found on the upper surface occur, along with multicellular glandular scales consisting of a short stalk and usually eight secretory cells (diameter including the detached cuticle: approximately 70–90 μm), which is typical for members of the Lamiaceae family; leaf margin has acute unicellular or bicellular covering trichomes with cuticular striations.

Transverse section: Bifacial; palisade cells in a single row; on the lower epidermis, stomata and neighboring cells are slightly raised above the epidermal surface.

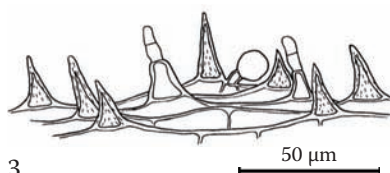
Powder: Leaf fragments without stomata (upper epidermis) and with diacytic stomata (lower epidermis)—all fragments with uni- and bicellular covering trichomes with cuticular striations or a warty cuticle and the short glandular trichomes; fragments of long uniseriate covering trichomes; infrequent glandular scales.



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