

BotaniCERT[®] Botanical Reference Materials

Increase accuracy and efficiency of your identity and authenticity assessment of plant materials



Plant-based products are widely used for herbal medicinal drugs, dietary supplements or cosmetic applications. The complexity and the natural variations of the chemical composition of plants pose big challenges to quality control and authenticity confirmation of botanical products.

It can be very challenging to confirm the plant species and the correct plant part of a botanical material. This opens door for intended or unintended adulteration or mislabeling of materials of plant origin.

Chemical analysis testing for plant-specific markers is crucial but often not sufficient to unambiguously confirm the species and plant parts. Other characteristics like aspect and DNA data must be considered as well to complement chemical fingerprint data.

With the recent addition of BotaniCERT[®] botanical reference materials, we are enriching our already comprehensive offering of phytochemical standards

BotaniCERT[®] botanical reference materials are samples of plants or plant parts (leaf, root, rhizome, fruit,

flower, seed etc.) authenticated by organoleptic criteria, macroscopic and microscopic examination, HPTLC and HPLC phytochemical fingerprint and genetic markers by PCR. They are given with 2 or 3 markers (ITS, matK, rbcL) and DNA sequences are reported.

The materials are sourced from botanical gardens, collected by botanical experts during the flowering period, and analyzed by seasoned phytochemists and geneticists.

All products are provided as 5g samples and a detailed Certificate of Analysis — with related pictures, chromatograms, and DNA sequences, is available.

Using a Botanical Reference Material in an identification analysis allows for calibration of methods and improves the accuracy of the result obtained.

Find all BotaniCERT[®] products at [SigmaAldrich.com/botanicert](https://www.sigmaaldrich.com/botanicert)

Find our entire range of phytochemical reference materials at [SigmaAldrich.com/medicinalplants](https://www.sigmaaldrich.com/medicinalplants)

Product	Name	Plant Part	Family	English Name (US)
BOTB9121	<i>Allium ursinum</i>	Leaf	Amaryllidaceae	Wild garlic
BOTB9282	<i>Apium graveolens</i>	Leaves and stems	Apiaceae	Celery
BOTB9142	<i>Artemisia annua</i>	Aerial parts	Asteraceae	Sweet wormwood
BOTB9089	<i>Artemisia vulgaris</i>	Leaf	Asteraceae	Mugwort
BOTB9092	<i>Bixa orellana</i>	Seed	Bixaceae	Achiote
BOTB9081	<i>Calendula officinalis</i>	Flower	Asteraceae	Pot-marigold
BOTB9073	<i>Calluna vulgaris</i>	Flower	Ericaceae	Heather
BOTB9007	<i>Carum carvi</i>	Fruit	Apiaceae	Caraway
BOTB9040	<i>Citrus × aurantium</i>	Pericarp	Rutaceae	Bitter orange
BOTB9038	<i>Cola nitida</i>	Seed	Malvaceae	Cola
BOTB9384	<i>Coriandrum sativum</i>	Fruit	Apiaceae	Coriander
BOTB9059	<i>Desmodium adscendens</i>	Leaf	Fabaceae	Clover savannah
BOTB9009	<i>Echinacea purpurea</i>	Root	Asteraceae	Purple coneflower
BOTB9011	<i>Eleutherococcus senticosus</i>	Root	Araliaceae	Siberian ginseng
BOTB9118	<i>Eschscholzia californica</i>	Aerial parts	Papaveraceae	Californian poppy
BOTB9058	<i>Eucalyptus globulus</i>	Leaf	Myrtaceae	Blue gum
BOTB9052	<i>Frangula purshiana</i>	Bark	Rhamnaceae	Cascara buckthorn
BOTB9032	<i>Fraxinus excelsior</i>	Leaf	Oleaceae	European ash
BOTB9024	<i>Glycyrrhiza glabra</i>	Root	Fabaceae	Liquorice
BOTB9106	<i>Griffonia simplicifolia</i>	Seed	Caesalpiniaceae	Griffonia
BOTB9103	<i>Gymnema sylvestre</i>	Leaf	Apocynaceae	Gymnema
BOTB9014	<i>Hamamelis virginiana</i>	Leaf	Hamamelidaceae	American witch-hazel
BOTB9015	<i>Harpagophytum procumbens</i>	Root	Pedaliaceae	Devil's claw
BOTB9062	<i>Hibiscus sabdariffa</i>	Calyx and epicalyx	Malvaceae	Jamaican sorrel
BOTB9114	<i>Hoodia gordonii</i>	Stem slice	Apocynaceae	Hoodia
BOTB9405	<i>Humulus lupulus</i>	Female inflorescence	Cannabaceae	Hops
BOTB9080	<i>Illicium anisatum</i>	Fruit	Schisandraceae	Japanese star anise
BOTB9082	<i>Lamium album</i>	Flowering top	Lamiaceae	White nettle
BOTB9018	<i>Lepidium meyenii</i>	Root powder	Brassicaceae	Maca
BOTB9150	<i>Melilotus officinalis</i>	Aerial parts	Fabaceae	Yellow melilot
BOTB9016	<i>Melissa officinalis</i>	Leaf	Lamiaceae	Lemon balm
BOTB9217	<i>Mentha spicata</i>	Leaf	Lamiaceae	Spearmint
BOTB9037	<i>Mentha x piperita</i>	Leaf	Lamiaceae	Peppermint
BOTB9056	<i>Ocimum basilicum</i>	Leaf	Lamiaceae	Basil
BOTB9151	<i>Orthosiphon aristatus</i>	Leaf	Lamiaceae	Java Tea
BOTB9130	<i>Panax ginseng</i>	Flower	Araliaceae	Ginseng
BOTB9135	<i>Panax japonicus</i>	Root	Araliaceae	Japanese ginseng
BOTB9020	<i>Pimpinella anisum</i>	Fruit	Apiaceae	Anise
BOTB9061	<i>Piper methysticum</i>	Rhizome and Root	Piperaceae	Kava kava
BOTB9071	<i>Plantago lanceolata</i>	Leaf	Plantaginaceae	Narrow-leaf plantain
BOTB9070	<i>Plantago major</i>	Leaf	Plantaginaceae	Great plantain
BOTB9397	<i>Rhodiola crenulata</i>	Root and rhizome	Crassulaceae	
BOTB9119	<i>Ribes nigrum</i>	Leaf	Grossulariaceae	Blackcurrant
BOTB9029	<i>Rosa canina</i>	Hips	Rosaceae	Rose hip
BOTB9064	<i>Sambucus nigra</i>	Flower	Adoxaceae	Elder
BOTB9243	<i>Silybum marianum</i>	Aerial parts	Asteraceae	Milk thistle
BOTB9244	<i>Silybum marianum</i>	Seeds	Asteraceae	Milk thistle
BOTB9046	<i>Taraxacum officinale</i>	Root	Asteraceae	Dandelion
BOTB9060	<i>Thymus vulgaris</i>	Leaf	Lamiaceae	Garden Thyme
BOTB9160	<i>Urtica dioica</i>	Root and rhizome	Urticaceae	Common nettle
BOTB9254	<i>Vaccinium myrtillus</i>	Leaves	Ericaceae	Bilberry
BOTB9047	<i>Valeriana officinalis</i>	Rhizome and root	Caprifoliaceae	Common valerian
BOTB9098	<i>Verbena officinalis</i>	Aerial parts	Verbenaceae	Vervain
BOTB9021	<i>Vitis vinifera</i>	Leaf	Vitaceae	Wine grape
BOTB9057	<i>Zingiber officinale</i>	Rhizome	Zingiberaceae	Ginger

A list of BotaniCERT® Botanical Reference Materials (BRMs) is available at SigmaAldrich.com/botanicert
All products are provided in quantities of 5g.

