

Gastrodia elata planting under photovoltaic panels





Overview

Is gastrodia elata a obligate mycoheterotrophic plant?

(Liliales: Liliaceae), an endangered medicinal plant We present the 1.06 Gb sequenced genome of *Gastrodia elata*, an obligate mycoheterotrophic plant, which contains 18,969 protein-coding genes. Many genes conserved in other plant species have been deleted from the *G. elata* genome, including most of those for photosynthesis.

Is gastrodia elata a heterotrophic plant?

Gastrodia elata is an obligate mycoheterotrophic plant with highly reduced leaves and bracts in scape. Here, Yuan et al sequence and analyze its 1.06 Gb genome which provides insights in adaptation to a lifestyle of heterotrophy.

How is gastrodia elata Blume processed?

Sensory analysis, GC-MS, GC-IMS, and LC-MS/MS were used in combination. The optimal processing method is steaming first followed by heat pump drying. *Gastrodia elata* Blume (*G. elata*) is a traditional medicinal and edible plant whose quality is significantly influenced by post-harvest processing.

What is gastrodia elata?

Gastrodia elata (Orchidaceae) is an orchid popularly used in traditional Chinese medicine that has a fully mycoheterotrophic lifestyle with highly reduced leaves and bracts in scape, although field guides and systematists often refer to the plants as leafless 4, 5.

Where does gastrodia elata Blume grow?

Gastrodia elata Blume (*G. elata*), a heterotrophic plant that only grows on the fungus *Armillaria* (Ho et al., 2021), belongs to the Orchidaceae family (Fig. 1 A-D). This herb has a wide geographical range in China, Japan, Korea, Bhutan, and India (Fig. 1 E).



What is the genome size of *Gastrodia elata*?

7 Institute of Medicinal Botany, Yunnan Academy of Agricultural Sciences, 650223, Kunming, China. We present the 1.06 Gb sequenced genome of *Gastrodia elata*, an obligate mycoheterotrophic plant, which contains 18,969 protein-coding genes.



Gastrodia elata planting under photovoltaic panels

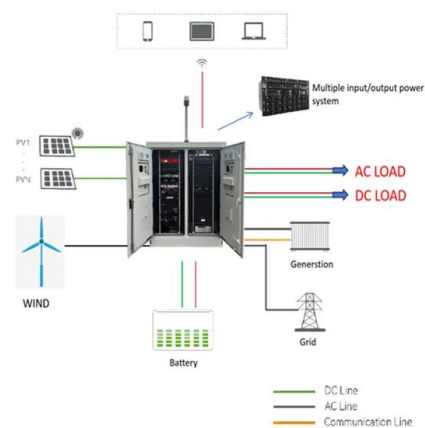


[PDF] The *Gastrodia elata* genome provides insights into plant

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The *Gastrodia elata* genome provides insights into plant

We present the 1.06 Gb sequenced genome of *Gastrodia elata*, an obligate mycoheterotrophic plant, which contains 18,969 protein-coding genes. Many genes conserved ...



The complete chloroplast genome of Korean ...

The completed chloroplast genome of *Gastrodia elata* Blume (*G. elata*) from Korea was determined in this study. The cpDNA is 35,230 bp in length and lacked the large and small single copy (LSC and

Gastrodia elata Blume

Plants 30-100 cm, rarely to 200 cm tall. Rhizomes usually ellipsoid, 8-12 cm, stout, 3-5(-7) cm in diam., sometimes larger, fleshy, densely noded, with triangular or broadly ovate scales at ...



Effect of Ultra-High-Pressure Treatment on *Gastrodia elata* Blume

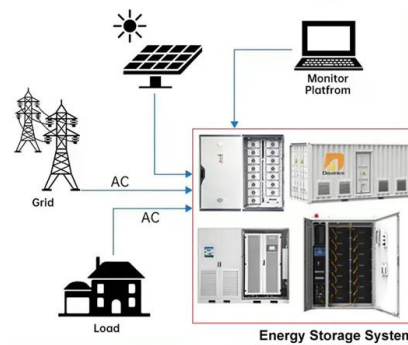
Gastrodiae Rhizoma (GE), the rhizome of the Orchidaceae plant *Gastrodia elata* Blume, is a traditional Chinese medicine with homologous medicinal and edible properties [] ...



Changes in Soil Chemistry and Microbial Communities in

Continuous cropping of the important achlorophyllous medicinal orchid *Gastrodia elata* Blume causes an imbalance in soil microecology leading to soil-borne diseases. ...

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Hierarchical Detection of *Gastrodia elata* Based on Improved ...

In order to identify different grades of *Gastrodia elata* quickly and effectively, the image data set of *Gastrodia elata* was established, and the network model was improved by ...





An exploration of mechanism of high quality and yield of ...

They found that the yield of *G. elata* Bl. co-planted with M1 strain is 1.905 times higher, compared with M3 one, and that the total amount of gastrodin and p ...



Integration of volatile and non-volatile metabolite profile, and

Gastrodia elata Blume (*G. elata*) is a traditional medicinal and edible plant whose quality is significantly influenced by post-harvest processing. To obtain an optimal post-harvest ...

A Review of Gastrodia Elata Bl. : Extraction, Analysis and ...

The review of *Gastrodia elata* Bl. from the perspective of food is one of the necessary steps to promote related development, by reviewing the literature on analytical ...



Bee pollination in the shadows: The role of pseudopollen and

Gastrodia elata is a fully mycoheterotrophic plant depending on wood-decaying fungi throughout its life cycle (Liu et al., 2024; Suetsugu et al., 2020). It has been recognized as a medicinal ...



Melatonin Treatment Maintains the Quality of Fresh-cut *Gastrodia elata*

Gastrodia elata, belonging to the Orchidaceae family, is rich in functional components such as gastrodin, amino acids, and polysaccharides [1]. In 2019, *G. elata* was ...



Ecological factors impacting genetic characteristics and metabolite

Here, *Gastrodia elata*, a medicinal plant, is employed as a model to explore the environmental factors that influence its genetic characteristics and metabolic accumulations. ...

Frontiers , Unraveling the key mechanisms of *Gastrodia elata* ...

1 Introduction. *Gastrodia elata* Blume, known as Tian-ma in Chinese, is a perennial herb of the Orchidaceae family and a valuable medicinal plant produced mainly in ...



The role of symbiotic fungi in the life cycle of *Gastrodia elata* ...

Gastrodia elata Blume, a fully mycoheterotrophic perennial plant of the family Orchidaceae, is a traditional Chinese herb with medicinal and edible value. Interestingly, *G. elata* requires



The processing methods, phytochemistry and pharmacology of Gastrodia ...

Gastrodia elata Bl. was first recorded in the Shennong's Classic of Materia Medica (?????) (Anonymous, 2008) in the Han Dynasty and was one of the rare ...



Impact of climate change on the geographical distribution and ...

Background Gastrodia elata is widely used in China as a valuable herbal medicine. Owing to its high medicinal and nutrient value, wild resources of G. elata have been overexploited and its ...

Assessment of the cultivation suitability and suitable regions of

Abstract: Climate change affects species growth areas by altering the suitability of their habitats. As a rare and endangered medical plant in China, the evaluation of the suitable distribution ...



Pan-Chloroplast Genomes Reveal the Accession-Specific Marker for

In this study, the complete chloroplast genomes of three G. elata variants were sequenced using the Illumina HiSeq 2500 platform. Another 21 chloroplast genomes from ...



[\(PDF\) Global metabolic profile and multiple](#)

Gastrodia elata Blume (Tianma in Chinese), a myco-heterotrophic orchid, is widely distributed in China. Tubers derived from this orchid are traditionally used as both medicinal and edible materials.



Pan-Chloroplast Genomes Reveal the Accession-Specific Marker for

Gastrodia elata rhizomes have been applied as traditional medicinal materials for thousands of years. In China, *G. elata* f. *elata* (red flower and stem, Ge), *G. elata* f. *viridis* ...



***Gastrodia elata* Blume. ?? (Tianma, *Gastrodia* Tuber)**

Although Tianma is a relatively safe herbal medicine, it is still strongly recommended to use it under proper conditions. Download chapter PDF. Similar content being ...



Exploration of the impact of different drying methods on the ...

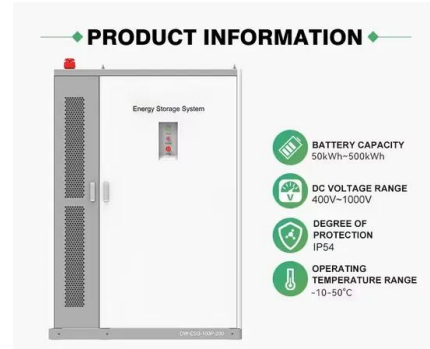
The dried tubers of *Gastrodia elata* Bl. f. *glauca* S. Chow, which are growing within the protection scope of geographical indication products (GB/T 19776-2008), are also known as "Gastrodia ...





Polysaccharide extraction optimization, monosaccharide ...

This study investigates the optimal extraction conditions, monosaccharide composition, and antioxidant activity analysis of polysaccharides from the aerial parts of three different varietal ...



Gastrodin Derivatives from Gastrodia elata, Natural Products and

Rhizoma Gastrodiae ("tian ma") is an important tonic herbal medicine derived from Gastrodia elata Blume (Orchidaceae) rhizomes. Its medicinal application for improving ...

The Gastrodia elata genome provides insights into plant

Gastrodia elata is an obligate mycoheterotrophic plant with highly reduced leaves and bracts in scape. Here, Yuan et al sequence and analyze its 1.06 Gb genome which ...



Gastrodia elata

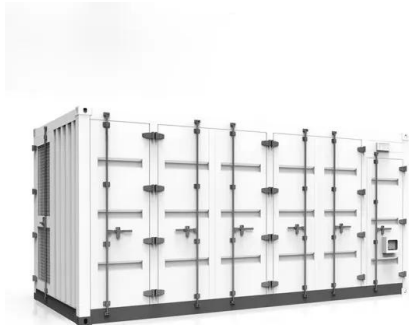
Gastrodia elata Bl. was first recorded in the Shennong's Classic of Materia Medica Gastrodia elata (Tianma), a rare plant used in traditional Chinese medicine, In the clinical practice of ...





Transcriptome analysis reveals underlying immune response ...

Background: *Gastrodia elata* Bl. f. *glauca* S. Chow is a medicinal plant. *G. elata* f. *glauca* is unavoidably infected by pathogens in their growth process. In previous work, we ...



Analysis of the Current Development Status of *Gastrodia Elata*: Bl.

1.2 The Planting Situation of *Gastrodia elata* Bl. f. *glauca* S. Chow in the Local Area utilizing the idle roofs of photovoltaic power plants to establish a "complementary agricultural and ..."

Phlebiopsis xuefengensis sp. nov. from *Gastrodia elata* (Orchidaceae...

Phlebiopsis is a genus of poroid crust fungi belong to the family *Phanerochaetaceae*. The genus contains 19 species, which show a widespread distribution. In ...



Bee pollination in the shadows: The role of pseudopollen and

The individuals growing under an open canopy and the plants situated deeper in the forest were observed for nearly equal amounts of time each year (i.e., approximately 20 h ...



A chromosome-scale *Gastrodia elata* genome and large-scale ...

We assembled a chromosome-level genome of the fully mycoheterotrophic plant *Gastrodia elata* (Orchidaceae) and performed comparative genomic analyses on the genomes of *G. elata* and ...



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