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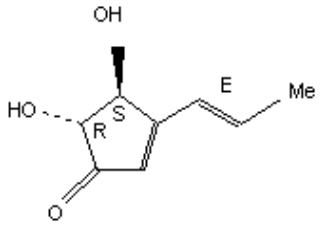
Product Information

Terrein
from *Aspergillus terrreus*

Catalog Number **T5705**
Storage Temperature –20 °C

CAS RN 582-46-7
Synonyms: (+)Terrein, Terrain



Product Description
Molecular formula: $C_8H_{10}O_3$
Molecular weight: 154.06

Terrein is a bioactive fungal metabolite reported to show plant growth inhibition and antibacterial activities.[1,2] Terrein also reduces melanin levels in a dose-dependent manner as well as tyrosinase protein production.[1]

The hypo-pigmentation effect was demonstrated in Mel-Ab melanocyte cells following a 4 day treatment with 5–50 μM of terrein.[2] In mammals there are three melanocyte-specific enzymes, tyrosinase, tyrosinase-related protein-1 (TRP-1) and TRP-2, that are involved in conversion of tyrosine to melanin (melanogenesis).[1-3] Terrein inhibits melanin synthesis by reducing tyrosinase production via extracellular signal-regulated protein kinase (ERK) activation. ERK activation is followed by microphthalmia-associated transcription factor (MITF) down regulation, which is required for tyrosinase expression. Terrein is a safe and more effective skin whitening agent in cosmetics than kojic acid, which has carcinogenic potential and has a weak whitening effect.[1,2]

Preparation instructions
Reconstitute the product in DMSO or water at 5 mg/ml.

Precautions and Disclaimer
This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability
Store the product sealed at –20 °C. Protect from light. Under these conditions the product is stable for at least 2 years.

References
1. Park, S.H. et al., Terrein: a new melanogenesis inhibitor and its mechanism. *Cell. Mol. Life Sci.*, **61**, 2878-2885 (2004).
2. Lee, S. et al., Synthesis and melanin biosynthesis inhibitory activity of (±)-terrein produced by *Penicillium* sp. 20135. *Bioorg. Med. Chem. Lett.*, **15**, 471-473 (2005).
3. Hearing, V.J., and Jiménez, M., Analysis of mammalian pigmentation at the molecular level. *Pigment Cell Res.*, **2**, 75-85 (1989).

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