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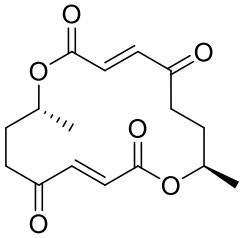
PRODUCT DATA SHEET

Pyrenophorin

Code No.: **BIA-P2456**

Pack sizes: **0.1 mg, 0.5 mg**



Synonyms : (-)-Pyrenophorin, (R,R)-(-)-Pyrenophorin

Specifications

CAS #	:	**5739-85-5**
Molecular Formula	:	**$C_{16}H_{20}O_6$**
Molecular Weight	:	**308.33**
Source	:	**Unidentified fungus**
Appearance	:	**White solid**
Purity	:	**>95% by HPLC**
Long Term Storage	:	**-20°C**
Solubility	:	**Soluble in methanol or DMSO**

Application Notes

Pyrenophorin, the diketone analogue of pyrenophorol, was first reported as a metabolite of the oat pathogen Pyrenophora avenae showing cytostatic properties. Pyrenophorin is a simple macrocyclic dilactone with phytotoxic and antifungal activity. Pyrenophorin inhibits seed germination but once the seed is germinated, pyrenophlorin enhances root development but causes abnormal chlorophyll retention in leaf sections. Pyrenophorin is more potent but less selective than pyrenophorol. Its mechanism of action involves electron misdirection and generation of reactive oxygen species. Pyrenophorin is a potent antifungal, significantly reducing the growth of M. violaceum and S. cerevisiae at 5 µM.

References

1. Structure of pyrenophorin. Nozoe S. et al. Tetrahedron Lett. 1965, 51, 4675.
2. Bioactivity of the fungal metabolite (8R,16R)-(-)-pyrenophorin on graminaceous plants. Kastanias M.A. & Chrysayi-Tokousbalides M. J. Agric Food Chem. 2005, 53, 5943.
3. Phytotoxic activity of pyrenophorin and its production in cultures of Pyrenophora avenae Ito et Kurib. Lerario P. & Graniti A. Phytopathologia Mediterranea 1985, 24, 280.
4. On the mode of action of the phytotoxin (8R,16R)-(-)-pyrenophorin. Aliferis K.A.& Chrysayi-Tokousbalides M. Pesticide Biochem Physiol. 2006 , 86, 7.
5. Antifungal sesquiterpenoids and macrolides from an endophytic Lophodermium species of Pinus strobus. McMullin D.R. et al. Phytochem Lett. 2015, 14, 148.

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