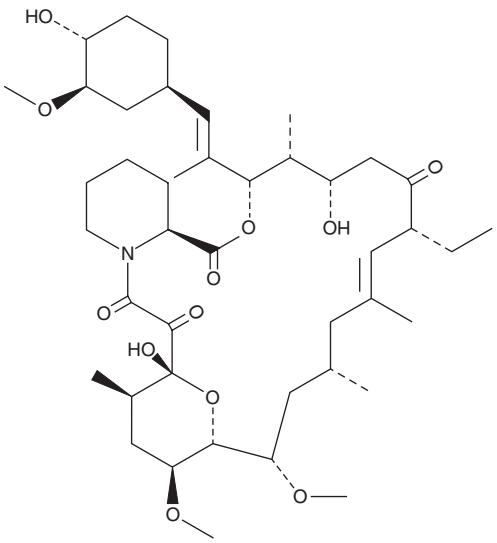
PRODUCT INFORMATION

Ascomycin

Item No. 11309



CAS Registry No.:	104987-12-4
Formal Name:	(3S,4R,5S,8R,9E,12S,14S,15R,16S,18R,19R,26aS)-8-ethyl-5,6,8,11,12,13,14,15,16,17,18,19,24,25,26,26a-hexadecahydro-5,19-dihydroxy-3-[(1E)-2-[(1R,3R,4R)-4-hydroxy-3-methoxycyclohexyl]-1-methylethenyl]-14,16-dimethoxy-4,10,12,18-tetramethyl-15,19-epoxy-3H-pyrido[2,1-c][1,4]oxaazacyclotricosine-1,7,20,21(4H,23H)-tetrone
Synonyms:	Changchuanmycin, FK-520, FR900520, Immunomycin, L 683590
MF:	$C_{43}H_{69}NO_{12}$
FW:	792.0
Purity:	≥98%
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Ascomycin is supplied as a crystalline solid. A stock solution may be made by dissolving the ascomycin in the solvent of choice, which should be purged with an inert gas. Ascomycin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of ascomycin in ethanol is approximately 20 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Ascomycin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, ascomycin should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Ascomycin has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Ascomycin, produced by the fermentation of *S. hygroscopicus* subsp. *ascomyceticus*, is an ethyl analog of tacrolimus (FK-506) with potent immunosuppressant properties that prevents T-cell proliferation through initial binding to FK-506-binding protein 12 (FKBP12), an immunophilin that acts as the principal mediator of FK506- and rapamycin-induced immunosuppression.[1,2] Ascomycin inhibits the enzymatic peptidyl-prolyl *cis*-trans isomerase and chaperone activities of PfFKBP35, an FKBP from *P. falciparum*, a causative agent of malaria in humans with an IC_{50} value of 0.52 µM.[3]

References

1. Mrowietz, U. Macrolide immunosuppressants. *Eur. J. Dermatol.* **9(5)**, 346-351 (1999).
2. Andexer, J.N., Kendrew, S.G., Nur-e-Alam, M., *et al.* Biosynthesis of the immunosuppressants FK506, FK520, and rapamycin involves a previously undescribed family of enzymes acting on chorismate. *Proc. Natl. Acad. Sci. USA* **108(12)**, 4776-4781 (2011).
3. Monaghan, P., Fardis, M., Revill, W.P., *et al.* Antimalarial effects of macrolactones related to FK520 (ascomycin) are independent of the immunosuppressive properties of the compounds. *J. Infect. Dis.* **191(8)**, 1342-1349 (2005).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM