**Product overview**

**Name**
FK 506

**Cat No**
HB0289

**Short description**
Potent calcineurin phosphatase 2B inhibitor

**Biological description**
Potent calcineurin phosphatase 2B (PP2B) inhibitor (IC\(_{50}\) = 2 nM). Interacts with FK-506 binding protein. Also inhibits IL-2 production by activated T-cells and reduces amount of GLUT4 on human adipocytes. Displays neuroprotective, antibacterial, and immunosuppressant properties.

**Alternative names**
Tacrolimus; Fujimycin; FK-506

**Biological action**
Antibiotic

**Purity**
>99%

**Properties**

**Chemical name**
(3S,4R,5S,8R,9E,12S,14S,15R,16S,18R,19R,26aS)-5,6,8,11,12,13,14,15,16,17,18,19,24,25,26,26a-Hexadecahydro-5,19-dihydroxy-3 ... ,10,12,18-tetramethyl-8-(2-propen-1-yl)-15,19-epoxy-3H-pyrido[2,1-c][1,4]oxaazacyclotricosine-1,7,20,21(4H,23H)tetrone

**Molecular Weight**
804.02

**Molecular Formula**
C\(_{44}\)H\(_{69}\)NO\(_{12}\).H\(_2\)O

**CAS Number**
104987-11-3

**PubChem identifier**
445643

**SMILES**
C[C@@H]1C[C@@H][C@@H][C@@H][C@@H][O2](O=O)O[C@@H](N3CCCC[C@@H][3C(-O)O[C@@H][C@@H][C@@H][O2]]\_2)\_1S/C44H69NO12/c1-10-13-19-25(2)18-26(3)20-37(54-8)40-38(55-9)22-28(5)44(52,57-40)41(49)42(50)45-17-12-11-14-32(45 ... 9(29(6)34(47)24-35(31)48)27(4)21-30-15-16-33(46)36(23-30)53-7/h10,19,21,26,28-34,36-40,46-47,52H,1,11-18,20,22-24H2,2-9H3/

**InChI**
InChI=1S/C44H69NO12/c1-10-13-19-25(2)18-26(3)20-37(54-8)40-38(55-9)22-28(5)44(52,57-40)41(49)42(50)45-17-12-11-14-32(45 ... 9(29(6)34(47)24-35(31)48)27(4)21-30-15-16-33(46)36(23-30)53-7/h10,19,21,26,28-34,36-40,46-47,52H,1,11-18,20,22-24H2,2-9H3/

**InChIKey**
QJJXYPXXYYFBGM-NYOQZLQMSA-N

**MDL number**
MFCD11045918

**Appearance**
White to off-white

**Storing and Using Your Product**

**Storage instructions**
-20 &degC;

**Solubility overview**
Soluble in ethanol (100 mM) and DMSO (100 mM)

**Important**
This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use.

**References for FK 506**

Possible nitric oxide modulation in protective effect of FK-506 against 3-nitropropionic acid-induced behavioral, oxidative, neurochemical, and mitochondrial alterations in rat brain.


**PubMedID:**
20550427
The complex of FK506-binding protein 12 and FK506 inhibits calcineurin phosphatase activity and IgE activation-induced cytokine transcripts, but not exocytosis, in mouse mast cells.


PubMedID: 7530743

Cyclosporine A and Tacrolimus Reduce the Amount of GLUT4 at the Cell Surface in Human Adipocytes: Increased Endocytosis as a Potential Mechanism for the Diabetogenic Effects of Immunosuppressive Agents.


PubMedID: 25004245

Mode of action of tacrolimus (FK506): molecular and cellular mechanisms.


PubMedID: 8588225