Ketoconazole is a broad spectrum antifungal agent which acts via inhibition of a cytochrome P450, CYP51A1 which is a lanosterol 14α-demethylase. Also inhibits CYP3A and CYP1A1. Inhibits adrenal steroidogenesis. Downregulates cholesterol synthesis in drug-tolerant human lung cancer cell lines. Blocks the biosynthesis of leukotrienes (LT) via inhibition of 5-lipoxygenase and dose dependently inhibits LT-mediated bronchoconstriction in guinea pigs.

1) Lambert et al. (1986) The effects if ketoconazole on adrenal and testicular steroidogenesis in vitro; Biochem. Pharmacol. 35 3999
2) Sai et al. (2000) Assessment of specificity of eight chemical inhibitors using cDNA-expressed cytochromes P450. Xenobiotica 30 327
4) Howell et al. (2019) Lung cancer cells survive epidermal growth factor receptor tyrosine kinase inhibitor exposure through upregulation of cholesterol synthesis; FASEB Bioadv. 2 90
5) Beetens et al. (1986) Ketoconazole inhibits the biosynthesis of leukotrienes in vitro and in vivo; Biochem. Pharmacol. 35 883

PHYSICAL DATA

Molecular Weight: 531.43
Molecular Formula: C_{26}H_{26}Cl_{2}N_{4}O_{4}
Purity: >98% (TLC)
Solubility: DMSO (up to 25 mg/ml) or ethanol (up to 20 mg/ml)
Physical Description: Off-white solid
Storage and Stability: Store as supplied at RT for up to two years from the date of purchase. Solutions in DMSO or ethanol may be stored at -20°C for up to 3 months.