

<b>Product Name:</b>	Voriconazole
<b>Product Number:</b>	V009
<b>CAS Number:</b>	137234-62-9
<b>Molecular Formula:</b>	C <sub>16</sub> H <sub>14</sub> F <sub>3</sub> N <sub>5</sub> O
<b>Molecular Weight:</b>	349.31
<b>Form:</b>	Crystalline powder
<b>Appearance:</b>	white to almost white crystalline powder
<b>Solubility:</b>	Sparingly soluble in ethanol and DMSO.
<b>Source:</b>	synthetic
<b>Description:</b>	Voriconazole is a synthetic, second-generation, broad-spectrum triazole antifungal. It is a derivative of fluconazole with increased antifungal activity and specificity. It inhibits ergosterol synthesis, which is the major sterol in fungal cell membranes. The compound is used in the treatment of a broad spectrum of yeasts (including <i>Candida</i> ) and molds (including <i>Aspergillus</i> ). Voriconazole was patented in 1990 by Pfizer. Voriconazole is sparingly soluble in ethanol and DMSO.
<b>Mechanism of Action:</b>	The mechanism of action of the azole family is to inhibit cytochrome P450 (specifically CYP450-dependent 14- $\alpha$ -sterol demethylase) which depletes ergosterol in fungal cell membranes. This increases cell permeability and disrupts normal cellular function.
<b>Spectrum:</b>	Voriconazole is fungistatic against all <i>Candida</i> species, including fluconazole-resistant strains of <i>C. albicans</i> . It is fungicidal against molds including many <i>Aspergillus</i> species.
<b>Microbiology Applications</b>	Voriconazole is used as a control and ERG11 inhibitor in YPD medium. It can also be used to test its interactions with valproic acid (VPA) during VPA-synergy assessment. (Chaillot et al, 2017).
<b>Insect Biology Applications</b>	Voriconazole can be used in an invertebrate in vitro model with <i>Galleria mellonella</i> (greater wax moth) larva. It is an alternative animal model for studying antifungal efficacy on mycosis, including cryptococcosis. Using 12 <i>Cryptococcus neoformans</i> and <i>C. gattii</i> strains to assess capsule thickness, biofilm formation, survival, and morbidity. The compound was found to reduce fungal burden and dissemination into the larval tissue. (de Castro et al, 2019).

## References:

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- Scott LJ and Simpson D (2007) Voriconazole: A review of its use in the management of invasive fungal infections. Drugs 67(2):269-298 PMID 17284090

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