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Certificate of Analysis

Catalog Number	BP17459
Product Name	Tebipenem Pivoxil

Physical and Chemical Properties

Synonyms	ME1211, Orapenem
CAS No.	161715-24-8
Chemical Formula	C22H31N3O6S2
Molecular Weight	497.63
Solubility	DMSO: 92 mg/mL (184.9 mM) H2O: <1 mg/mL; Ethanol: 81 mg/mL (162.8 mM)
Storage	Powder: -20°C for 2 years In solvent: -80°C for 1 year
Chemical Structure OR Tested Image	

Product Information

Description	Tebipenem pivoxil, an orally activity carbapenem antibiotic, is utilized in treating otolaryngologic and respiratory infections.

In vitro	Tebipenem Pivoxil has high?intestinal apical membrane permeability due to plural intestinal transport routes, including the uptake transporters such as OATP1A2 and OATP2B1 as well as simple diffusion. Tebipenem Pivoxil is quickly converted to tebipenem?(TBPM), an active form of?Tebipenem Pivoxil. Tebipenem Pivoxil are absorbed quickly, and the bioavailability is 71.4%, 59.1%, 34.8% and 44.9%, respectively, in mouse, rat, dog and monkey. Tebipenem shows the strongest bactericidal activity as early as 2 h after exposure at two times the MIC. Tebipenem shows higher affinities for PBP 1A and PBP 2B, high-molecular-weight enzymes, and for PBP 3, a low-molecular-weight enzyme, than for PBP 2X.? Tebipenem?has a potent?activity?against?Neisseria gonorrhoeae; its?activity?is comparable to it of cefixime that has most potent activity among oral antibiotics.
In vivo	Tebipenem Pivoxil results in survival rate of 83%, compared with 25% survival for Amoxicillin and 0% survival for controls in animal model of?otitis?media. Tebipenem?exhibits?slow?tight-binding inhibition at low micromolar concentrations versus the chromogenic?substrate?nitrocefin.?Tebipenem?acyl-enzyme complex remains stable for greater than 90 min and exists as mixture of the covalently bound drug and the bound retro-aldol cleavage product.

Analytical Data

HPLC	Shows Min >99% purity
H-NMR	Consistent with structure
Stability and Solubility Advice	Information on product stability, especially in solution, has rarely been reported and in most cases we can only provide a general guideline. We recommend that once the stock solution has been prepared, it be stored in equal quantities in sealed vials and used within 1 month. Avoid repeated freezing and thawing cycles. Storage conditions for some special products should be referred to their storage details.

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