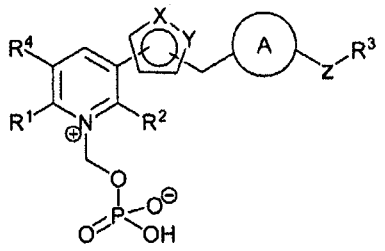
HETEROCYCLIC RING AND PHOSPHONOXYMETHYL GROUP SUBSTITUTED PYRIDINE DERIVATIVES, AND ANTIFUNGAL AGENTS CONTAINING SAME

ABSTRACT

The present invention provides antifungal agents that have excellent antifungal action, and is also excellent in terms of its properties, particularly its solubility in water and its safety. According to the present invention, disclosed are compounds represented by the following formula (I):



(I)

(wherein R^1 represents a hydrogen atom, a halogen atom, an amino group, R^{11}-NH- (wherein R^{11} represents a C_{1-6} alkyl group, a hydroxy C_{1-6} alkyl group, a C_{1-6} alkoxy C_{1-6} alkyl group, or a C_{1-6} alkoxycarbonyl C_{1-6} alkyl group), R^{12}-(CO)-NH- (wherein R^{12} represents a C_{1-6} alkyl group or a C_{1-6} alkoxy C_{1-6} alkyl group), a C_{1-6} alkyl group, a hydroxy C_{1-6} alkyl group, a cyano C_{1-6} alkyl group, a C_{1-6} alkoxy group, or a C_{1-6} alkoxy C_{1-6} alkyl group;

R^2 represents a hydrogen atom, a C_{1-6} alkyl group, an amino group, or a di-C_{1-6} alkylamino group;

one of X and Y represents a nitrogen atom, and the other represents a nitrogen atom or an oxygen atom;

ring A represents a 5- or 6-member heteroaryl ring or a benzene ring, which may have one or two halogen atoms or C_{1-6} alkyl groups;

Z represents a single bond, a methylene group, an ethylene group, an oxygen atom, a sulfur atom, $-CH_2O-$, $-OCH_2-$, -NH-, $-CH_2NH-$, $-NHCH_2-$, $-CH_2S-$, or $-SCH_2-$;

R^3 represents a hydrogen atom or a halogen atom, or a C_{1-6} alkyl group, a C_{3-}

$_8$ cycloalkyl group, a C_{6-10} aryl group, a 5- or 6-member heteroaryl group, or a 5- or 6-member non-aromatic heterocyclic group, wherein these groups may have one or two substituents selected from a substituent group α; and

R^4 represents a hydrogen atom or a halogen atom;

[substituent Group α]

a halogen atom, a cyano group, a C_{1-6} alkyl group, a C_{1-6} alkoxy group, a C_{1-6} alkoxycarbonyl group, a C_{3-8} cycloalkyl group, a C_{2-6} alkenyl group, and a C_{2-6} alkynyl group).

FIG. 15