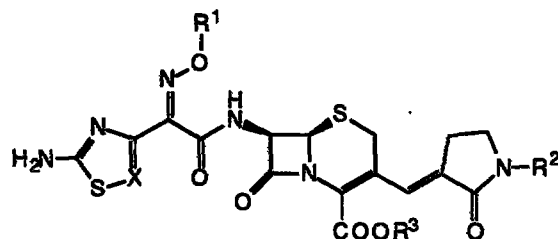


Abstract

The present invention relates to cephalosporin derivatives of the general formula



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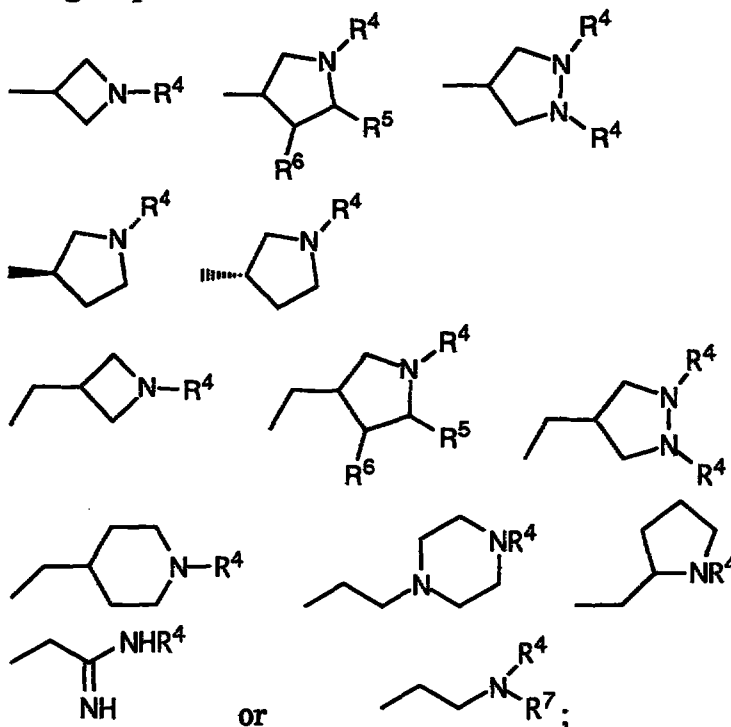
I

wherein

X is CH or N;

R¹ is hydrogen or cyclopentyl;

R² is a group of formula



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R³ is hydrogen, an alkalimetal ion or a tertiary ammonium group;

R⁴ is hydrogen, an amino protecting group, pyrrolidin-2-ylmethyl, azetidin-3-ylmethyl, iminomethyl, 1-carbamimidoyl;

- R⁵ is hydrogen, dialkylcarbamoyl, ω -hydroxyalkyl, ω -aminoalkyl, pyridinium-1-ylmethyl, 1-hydroxy-3-aminomethyl-propyl or (hydroxy)-(pyrrolidin-2-yl)methyl;
- 5 R⁶ is hydrogen, trifluoromethyl or hydroxy; and
- R⁷ is alkyl, ω -hydroxy-alkyl, cycloalkyl, 3-pyrrolidinyl, 3-azetidiny, iminomethyl or 1-carbamimidoyl;

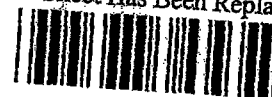
as well as readily hydrolyzable esters thereof, pharmaceutically acceptable salts of said compounds and hydrates of the compounds of formula I and of

10 their esters and salts;

the invention is further concerned with the manufacture of compounds of formula I; with their use as pharmaceutically active substances, particularly for the treatment and prophylaxis of infectious diseases, and with pharmaceutical preparations containing a compound of formula I for

15 the treatment and prophylaxis of infectious diseases.

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