



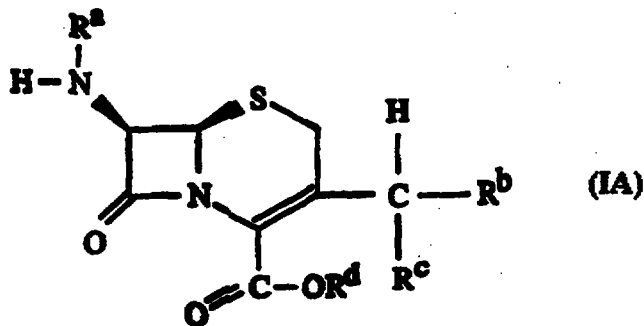
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(54) Title: **CEPHALOSPORIN SYNTHESIS**

(57) Abstract

Intermediates in the production of cephalosporins of formula (IA) wherein either α) R^a denotes hydrogen or a silyl group; R^b denotes a group of formula $-OR^c$, wherein R^c denotes hydrogen or alkyl; and R^c and R^d together denote a bond; or β) R^d and R^a denote hydrogen or a silyl group; and R^b and R^c together denote an imino group of formula $=N-Y$, wherein Y denotes alkyl, aryl or heterocyclyl; or γ) R^d denotes hydrogen or a silyl group; R^a denotes hydrogen, if R^d denotes hydrogen; or, R^a denotes hydrogen or a silyl group, if R^d denotes a silyl group; and R^b and R^c together denote the oxo group; in free form or in salt form.



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