

SYNTHESIS OF 1,1-DIMETHYLCARBAPENEM DERIVATIVES AND RELATED COMPOUNDS

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Some new 1-carbapenem derivatives with dimethyl or spiro-cyclopentyl substituents at C-1 position were synthesized *via* a Dieckmann-type cyclization.

By the action of lithium hexamethyldisilazane, the chloride (1) and (2) cyclized to give 1-carbapenams (3) and (4), respectively. Reduction of the carbonyl group of compound (3) followed by mesylation and elimination gave a carbapenem (5). Catalytic hydrogenolysis of (5) in the presence of 1 equiv of 3,3,6,9,9-pentamethyl-2,10-diaza-bicyclo-[4.4.0]-1-decene afforded the salt (6), which was converted into the corresponding potassium salt when treated with 1 equiv of potassium 2-ethylhexanoate. Furthermore, the keto ester (3) was treated with methanesulfonic anhydride to give C-3 sulfonyl compound (7), which was converted into the conjugated sulfone (8) in four steps.

