

SYNTHESES OF FLUORINATED HETEROCYCLIC COMPOUNDS
USING HEXAFLUOROBUTYNE-2

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Syntheses of some fluorinated heterocyclic compounds using hexafluorobutyne-2 by cycloaddition reactions are reported.

Heating of 1-methyl-2-ethoxyindole with hexafluorobutyne-2 afforded 1-methyl-2-ethoxy-3,4-bis(trifluoromethyl)benzo[b]azepine, while 1-methylindole was quantitatively recovered in this reaction.

Quinoline 1-oxide gave quinolinium trifluoromethyltrifluoroacetyl methylide, 2-(2,2,2-trifluoroethyl)quinoline, and 2,3-bis(trifluoromethyl)furo[2,3-b]quinoline with an identified product (M^+ 403).

Isoquinoline 2-oxide gave 1,2,3-tris(trifluoromethyl)-3-trifluoroacetyl-3,10b-dihydropyrrolo[2,1-a]isoquinoline, 1,2,3-tris(trifluoromethyl)-3-trifluoroacetyl-2,3-dihydropyrrolo[2,1-a]isoquinodine, 1,2,3-tris(trifluoromethyl)pyrrolo[2,1-a]-isoquinoline and 2-(2,2,2-trifluoroethyl)-1,2-dihydroisoquinolin-1-one.

Pyridinium dicyanomethylide gave 1,2-bis(trifluoromethyl)-3-cyanoindolizine.

The mechanism for these products are discussed.

These results show high utility of hexafluorobutyne-2.