

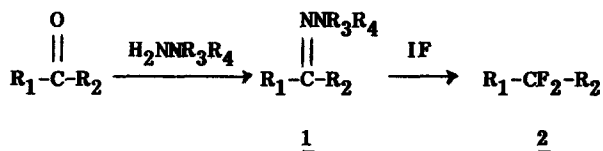
## REACTIONS OF HYDRAZONES WITH IODINE MONO-FLUORIDE

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The reaction of hydrazones with IF presents an attractive, simple and easy way for converting a carbonyl group into a geminal difluoro moiety.

Iodine mono-fluoride is prepared by passing a dilute mixture of molecular fluorine in nitrogen through a suspension of iodine in CFC<sub>13</sub> at -78°C and is then used without further purification. IF was reacted at low temperatures with various hydrazones, 1a, producing in good yields the corresponding gem-difluoro compounds, 2a.



- a. R<sub>1</sub>, R<sub>2</sub> various aryl and alkyl groups, R<sub>3</sub>=R<sub>4</sub>=H  
b. R<sub>1</sub>=aryl or alkyl group, R<sub>2</sub>=R<sub>3</sub>=R<sub>4</sub>=H  
c. R<sub>1</sub>, R<sub>2</sub> various aryl and alkyl groups, R<sub>3</sub>=H, R<sub>4</sub>=CH<sub>3</sub>  
d. R<sub>1</sub>, R<sub>2</sub> various aryl and alkyl groups, R<sub>3</sub>=R<sub>4</sub>=CH<sub>3</sub>

It seems that hydrazones made from aldehydes, 1b, can also react efficiently with IF in a similar mode constructing the interesting difluoromethyl group, 2b. The reaction is not restricted only to unsubstituted hydrazones, which are sometimes difficult to prepare, but also includes N-methyl, 1c, and N,N-dimethyl hydrazones, 1d. The latter type of compounds react considerably more slowly with IF. There are indications that other carbon-nitrogen double bonds are also suitable for this reaction.