FACILE OXY-VINYL[1,3]SHIFT
PROMOTED BY TETRABUTYLAMMONIUM FLUORIDE

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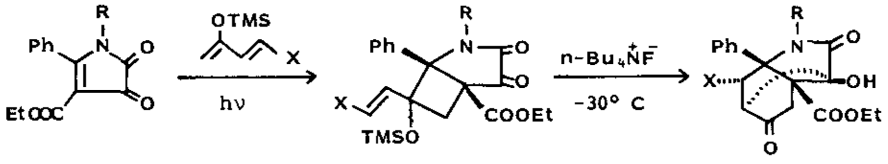
Oxy-vinyl[1,3]shift is an useful synthetic tool to effect two carbon unit enlargement. The reaction is usually achieved by heating a trialkylsilyloxyvinyl system at high temperature, and is known to be enormously accelerated in presence of strong bases such as potassium hydride in aprotic solvent. We have found that a quarternary ammonium alkoxide generated from a trialkylsilyloxyvinyl cyclobutane by tetrabutylammonium fluoride causes facile [1,3]shift to produce a cyclohexanone under neutral conditions at low temperature.

The examples were demonstrated in the syntheses of hydroindole derivatives 3 from 7-vinyl-7-trimethylsilyloxy-2-azabicyclo[3.2.0]heptane-3,4-diones 2, photoadducts of dioxopyrrolines 1 to 2-trimethylsilyloxybutadienes. The method was successfully applied to the synthesis of erythrinan derivatives (4→6).



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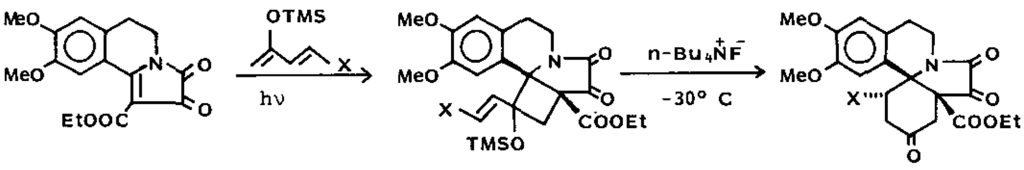

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