Bromination of 4-bromoindanone and 5-bromoindanone

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INTRODUCTION

Brominations of hydrocarbons are important processes in synthetic chemistry. 1,2 Brominated compounds are valuable starting materials for organometallic reagents 3 and coupling reactions. 4 Indanes and indanones are used extensively in medicinal chemistry. 5

Herein, we carried out the bromination reactions of 4-bromoindanone, 5-bromoindanone and formed the di- and tribromoindanone which could be the precursors for synthesis pharmaceutically, synthetically and medicinally important compounds.

RESULTS AND DISCUSSION

The treatment of 4-bromoindanone (1) with 2.2 equivalent of bromine at room temperature for 2 h yielded 2,2,4,5-tetramethylene (2) in quantitative amount. 4-bromoindanone (1) reacted with bromine in carbon tetrachloride and triethylamine while irradiation with a 150 W projector lamp for 12 h gave dibromide 3 (65%). 2,2,5,6-tetramethylene (5) was generated by treatment of 5-bromoindanone (4) with 2.2 equivalent of bromine in dichloromethane at rt for 2 h in a yield of 90%. The reaction of 5-bromoindanone with 3.2 equivalent of bromine in carbon tetrachloride and Et3N at rt while irradiation with a 150 W projector lamp for 12 h gave 2,3,5,6-tetramethylene (6) in 58% yield. (Scheme).

CONCLUSION

Bromination of 4-bromoindanone (1) and 5-bromoindanone (4) were accomplished efficiently and optimum reaction conditions were presented.

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