Synthesis of steroidal selenadiazoles

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Synthesis of steroidal selenadiazoles in view of their medicinal importance1-3. A recent survey of literature reveals the remarkable biological activity of azasteroids4-6 and selenium itself has got its own medicinal importance7-10 so in this note we report the synthesis of steroidal selenadiazole, a metal carrier steroid which may prove to be a potent pharmaceutically active compound. 5a-Cholestan-6-one semicarbazones11-13 in acetic acid was heated with SeO₂ on a water-bath. The resultant product when separated on a silica gel column gave steroidal selenadiazoles 4-6 as glassy semi-solids.

The structures of these selenadiazoles 4-6 were established on the basis of analytical and spectral evidences. The IR spectra showed no carbonyl or N-H absorption band. ¹H NMR spectra displayed expected peaks and the mass spectra of these selenadiazoles 4-6 showed respective molecular ion peaks with the characteristic isotopic abundance pattern for a selenium containing compounds12.

Experimental Section

Preparation of selenadiazoles 4-6. General procedure. 3β-Acetoxy-5α-cholestan-6-eno[6,7-d] selenadiazole 4 and its analogues 5 and 6 is described.

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