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Spectrophotometric Determination of Nevirapine Following its Reaction with Sodium Nitropruside and Acetic Anhydride

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SUMMARY. **Nevirapine is an antiretroviral agent that belongs to the class of non-nucleoside reverse-transcriptase inhibitors (NRTI's) used in the management of HIV infection in adults. This study is aimed at developing and validating three simple, sensitive and cost-effective spectrophotometric methods for ascertaining its quality. Nevirapine was determined spectrophotometrically at 290 nm after dissolution in chloroform (Method I). The drug was also derivatized by its reaction with sodium nitroprusside and hydroxylamine (Method II) to form a yellow coloured complex (absorption maximum, 440 nm) which was assayed to quantitatively evaluate its content in the formulation. The drug was further assayed by its condensation with citric acid-acetic anhydride (Method III) to form a red coloured complex (absorption maximum, 360 nm) which was similarly quantified. Recovery experiments carried out by the proposed methods showed that Method I gave a mean recovery of 100.5 ± 1.66 % while complexation with sodium nitroprusside and hydroxylamine (Method II) gave 101.9 ± 2.03 % recovery. The technique of complexation with citric acid-acetic anhydride (Method III) similarly gave 100.6 ± 0.96 % mean recovery. These results show that the proposed methods are accurate, precise and sensitive. In addition to being simple and cost-effective, they can also be used conveniently to monitor the quality of Nevirapine in resource poor settings where HPLC, which is the official method of choice, may not be readily available.**

KEY WORDS: Acetic anhydride, Complexation, Nevirapine, Sodium nitroprusside, spectrophotometry.

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