Detection of Quinine on thin layer plates using π-Acceptors in 1,4-Dioxane

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The paper reports the use of π-acceptors, chloranilic acid and p-chloranil for the detection of quinine on thin-layer chromatographic plates.

π –Acceptors are aromatic systems containing electron - withdrawing substituents, such as nitro ,cyano and halogen groups[1]. Some examples of p-acceptors include p-chloranil, o-chloranil, chloranilic acid, bromanil etc. These compounds readily form complexes with donor molecules giving rise to visible chromogens, thus making them versatile for use in pharmaceutical and chemical analysis[2]. p-Acceptors have recently been found to be very useful as detecting reagents for drugs and chemicals possessing nitrogen and other donor molecules. Okide[3] recently described the spectrometric determination of quinine using a p-acceptor *(o-chloranil)*, a method rather expensive and cumbersome. The use of p-acceptor (*p-chloranil and chloranilic acid*) for the qualitative analysis of quinine on thin layer plates is reported in this communication.

Four tablets of the different brands of quinine were crushed to a fine powder. To 100 mg of each powder, 10 ml of methanol was added and stirred with a glass rod until its dissolution was achieved. A 0.5% w/v solution of chloranilic acid or p-chloranil in 1,4-dioxane was used as a spray reagent. The most suitable solvent system was composed of methanol: ethanol acetic acid (4:3:2). Each of the drug sample was spotted twice on the same pair of activated plates using glass capillary tubes. The plates were air-dried and sprayed with the appropriate locating reagents and examined for colour formation and stability after which they were countersprayed with 2,7-dichlorofluorescien and re-examined. Chloranilic acid gave a violet colour with quinine while p-chloranil gave a pink colour. The coloured spots formed with the regents disappeared after 25 min. On counterspraying with 2,7-Dichloroflourescien, the violet colour remained stable for over 20 h while the pink colour faded after 4 h.

It is concluded that at a detection limit of 2-3 mcg/ml this method, even with the availability of routine reagents, offers a definite alternative.

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