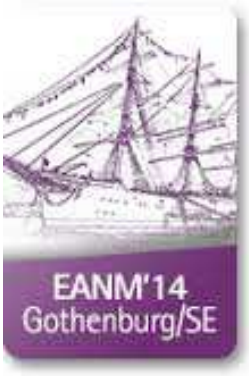

Checking the proper functioning of a radiopharmacy radiochromatograph

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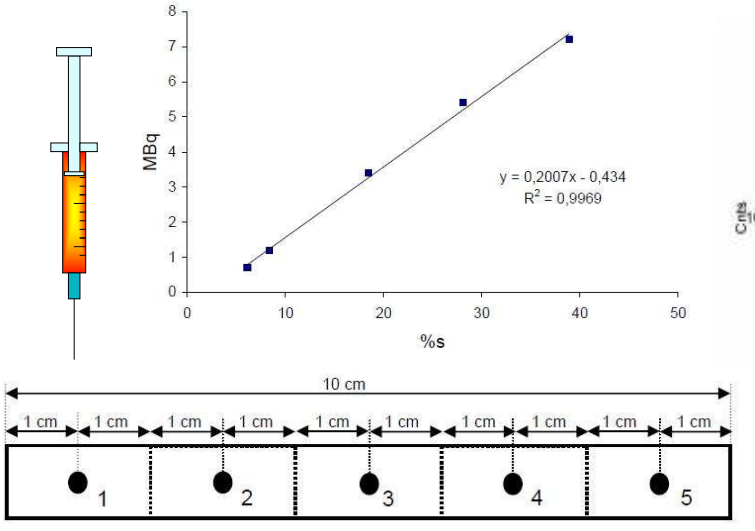
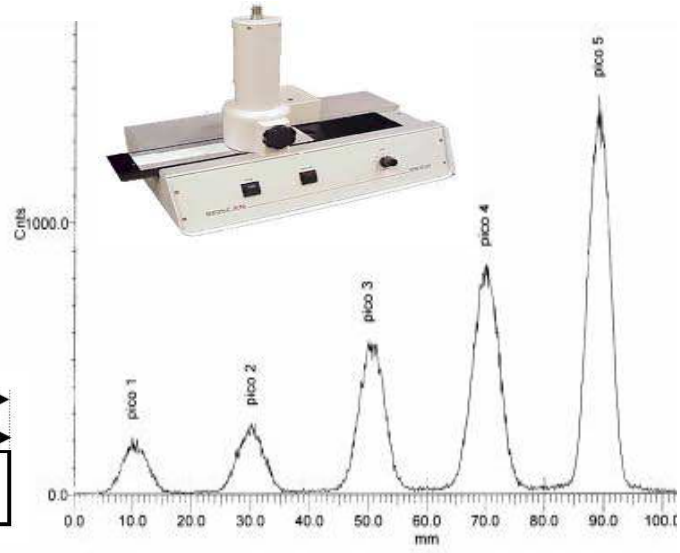
Objective: The aim of this project was to develop a procedure to verify the proper functioning of the radiochromatograph used for carrying out radiochemical purity controls of radiopharmaceuticals.

Material and Methods: Prepare a strip of chromatography paper (1 x 10 cm), drawing five dots at exactly: 1 cm (Rf 0.1), 3 cm (Rf 0.3), 5 cm (Rf 0.5) , 7 cm (Rf 0.7) and 9 cm (Rf 0.9), respectively. Take a syringe with 0.1 ml of concentrated radioactive solution of the desired radionuclide for verification. Place a drop of this radioactive sample on the first point. Dilute the contents of the syringe to half with water and place another drop on the second point. Repeat the above process until the last point. Perform the strip's radiochromatogram. Cut the strip into five pieces of 2 cm each and measure their activities in a verified activimeter. Determine the correlation between the peak areas of the radiochromatogram and its measures in the activimeter. Let decay the activity of the strip pieces for a couple of days and count the activites of the pieces with a verified well counter. Determine the correlation between the peak areas of radiochromatogram and its measures in the well counter.





Results: Obtaining a correlation coefficient for the above measures as close to 1 (in absolute value), and the spatial coincidence of the peaks Rf in the radiochromatogram with the exact spots where the droplets were placed, provide the sufficient reliability for the radiochemical purity tests performed with that radiochromatograph.

Conclusion: We conclude that this method is useful to verify the proper functioning of a radiochromatograph, ensuring that the quality controls of radiochemical purity are performed correctly.