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Microdetermination of Polyamines (putrescine, cadaverine, spermidine and spermine) Using Polyamide Thin-layer

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A fluorometric method for the determination of polyamines (putrescine, cadaverine, spermidine and spermine) using polyamide thin-layer is described. Dansylated polyamines obtained after the reaction with dansyl-chloride at pH 9.5 at 40°C for 1 h were extracted into toluene. An aliquot of the extract was spotted on the polyamide thin-layer plate, and developed with a solvent system of water-formic acid-triethylamine (54 : 15 : 2). Spots were measured with a scanning fluorometer. The fluorescence intensity of dansylated polyamines was stable on the plate at least 24 h. The relative standard deviation of the fluorescence intensity obtained on the same thin-layer plate was (1.5~5.0)% at 200 pmol/spot, and the lowest limit of determination was 10 pmol/spot for bis-DNS-putrescine, bis-DNS-cadaverine and tri-DNS-spermidine, and 5 pmol/spot for tetra-DNS-spermine. This method was successfully applied for the determination of polyamines in tissues of male rats and guinea pigs.

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