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Note

Resolution of Dansyl leucine and Dansyl isoleucine

In determining the N-terminal group for a protein by the Dansyl chloride technique[1] we found our N-terminal amino acid was either leucine or isoleucine and we could not resolve the two by the published chromatographic systems[2]. The one system which claimed a significant resolution[3] we could not repeat and the claimed polarities of the two isomers were reversed from those we have observed in all the solvent systems we have tried.

We have therefore worked out the conditions for resolution of these two amino acid derivatives using a standard Dansyl leucine and Dansyl isoleucine from Nutrional Biochemicals Co. and Brinkmann Analytical Silica Gel G thin-layer plates without fluorescent indicator. The plates were developed five times to a height of 10 cm in chloroform–methanol (95:5) solvent, drying between each development. This clearly resolved the two isomeric amino acid derivatives. (Dansyl isoleucine, $R_F = 0.37$; Dansyl leucine, $R_F = 0.25$.)

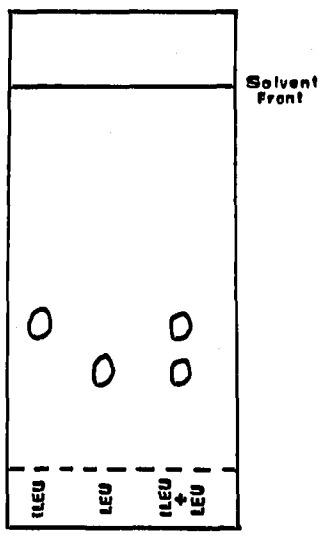

Fig. 1. 30-nmole samples of DNS-leucine and DNS-isoleucine chromatographed together and separately on silica gel analytical plates developed in chloroform–methanol (95:5) developed five successive times to 10 cm. Visualized with long wavelength UV, 1 A.

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