CHROM. 5626

A FEW WORDS ON THIN-LAYER ELECTROPHORESIS

JUSTUS G. KIRCHNER*

The Coca-Cola Company, P.O. Drawer 1734, Atlanta, Ga. 30301 (U.S.A.)

Thin-layer electrophoresis (TLE) dates back to CONSDEN, GORDON AND MARTIN[1], who, in 1946, separated a mixture of amino acids and peptides on a 1.4-mm layer of silica gel. There are a number of advantages in applying TLE over that of using thicker layers: For one it is easier to keep the thin layers cool and because of this, higher voltages can be applied thus decreasing the time factor. For some things TLE offers greater sensitivity of detection and it eliminates the need to slice the gel after electrophoresis. This latter job at times can be tedious.

I have the feeling that TLE is not applied as often as it should be and the advantages of combined TLC–TLE should not be overlooked. Two-dimensional work with TLC in one direction and electrophoresis in the other direction can give separations not realized by two-dimensional chromatography. Although the order of application can be in either direction, that is, TLE followed by TLC or *vice versa*, it is probably easiest to apply the TLC separation first to the activated plate and after removing the solvent then saturating the layer with the buffer solution prior to carrying out the electrophoresis.

TLE has also been combined two-dimensionally with thin-layer gel filtration.

As shown by RAYMOND AND AURELL[2], two-dimensional TLE may be carried out by using different concentrations of gel in each dimension.

Finally there are a few comments that I would like to make to the authors of papers on electrophoresis. Very few of the published papers carry the term "thin-layer" in their titles so that it is difficult to locate articles on TLE from the titles. Even when one looks up a paper on electrophoresis many times, it is difficult to determine what thickness of layer was used. On the whole there is a tendency to minimize the electrophoretic details. With the numerous papers on electrophoresis it would be extremely helpful in locating information if the term "thin-layer" were inserted in the title.

REFERENCES

1 R. CONSDEN, A. H. GORDON AND A. J. P. MARTIN, *Biochem. J.*, 40 (1946) 33.
2 S. RAYMOND AND B. AURELL, *Science*, 138 (1962) 152.

---

* Symposium chairman.