reduziertem reinen Cytochrom b_5 (hergestellt nach[6]) wird durch Ascorbinsäure nicht beeinflusst.

Dehydroascorbinsäure (hergestellt nach[7], frei von Ascorbinsäure), wirkt im DPNH-Oxydasetest und bei der Cytochrom b_5-Reoxydation genauso wie Ascorbinsäure. Dies steht im Widerspruch zu Ergebnissen, nach denen Dehydroascorbinsäure unwirksam war[1].

Die vorliegenden Befunde erlauben den Schluss, dass Ascorbinsäure in der DPNH-abhängigen mikrosomalen Atemkette als Elektronenüberträger zwischen Cytochrom b_5 und Sauerstoff wirksam ist.

Physiologisch-chemisches Institut, Friedrich-Schiller-Universität, Jena (Deutschland)

HORST FRUNDER
EVA BLUME
HARALD KLUGE

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Free-boundary electrophoresis of histones

While as a rule electrophoresis is carried out at pH values above the iso-electric point of proteins, the very high iso-electric point of histones (about pH 12) perforce leads to electrophoresis below this value. As a matter of fact, the published free-boundary-electrophoresis diagrams of histones (see *e.g.* refs. 1, 2) are all marred by an exceptionally strong discongruence of the ascending and descending boundaries.

In our experiments on the lysine-rich fraction of calf-thymus histone we have also always found this lack of enantiography (see Fig. 1), as long as electrophoresis

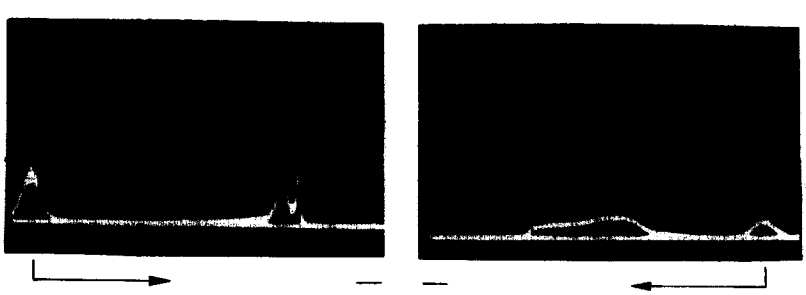

Fig. 1. Electrophoresis of lysine-rich fraction of calf-thymus histone in sodium diethylbarbiturate–sodium acetate–HCl buffer, pH 8.2, I 0.10; 5000 sec.

Fig. 2. Electrophoresis of same preparation as used in Fig. 1 in Tris–HCl buffer, pH 8.2, I 0.10; 6000 sec.

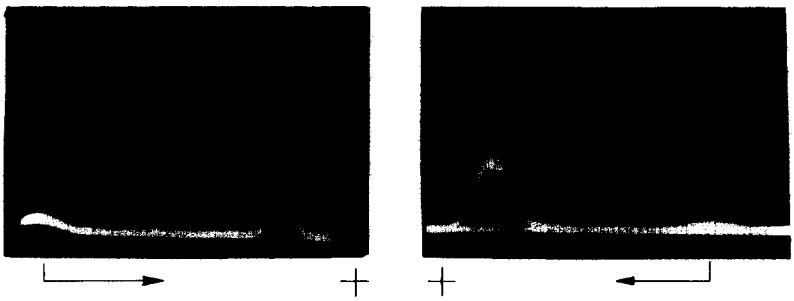

Fig. 3. Electrophoresis of bovine serum albumin in Tris–HCl buffer, pH 8.2, I 0.10; 15000 sec.

was carried out in the customary buffers, diethylbarbiturate–acetate or acetate–acetic acid (sodium salts).

Now above its iso-electric point a protein will migrate in the same direction as the buffer anions, below this point in the same direction as the buffer cations. This explains the seemingly abnormal behaviour of histones in free-boundary electrophoresis, as the best enantiography is obtained in a medium with slowly-moving buffer ions bearing the same sign as the proteins[3].

Indeed a much better enantiography was achieved by performing the electrophoresis of the histone in Tris–HCl buffer of pH 8.2 (Fig. 2), in which the slowly-moving Tris cation migrates in the same direction as the histones, while in this same buffer bovine serum albumin (iso-electric point about 4.6) showed a very pronounced lack of enantiography (Fig. 3).

We trust that the publication of this observation will prove useful to other workers in the field of histones.

Laboratory for Physiological Chemistry, The University, Utrecht (The Netherlands)

E. H. DE NOOIJ
J. A. NIEMEIJER

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