

Copy of a printed image referenced as "Starch gel electrophoresis of ribosomal proteins (Waller)"

Contributors

Gratzer, W. B. (Walter Bruno), 1932-

Publication/Creation

February 1963

Persistent URL

<https://wellcomecollection.org/works/j438g6xg>

License and attribution

You have permission to make copies of this work under a Creative Commons, Attribution, Non-commercial license.

Non-commercial use includes private study, academic research, teaching, and other activities that are not primarily intended for, or directed towards, commercial advantage or private monetary compensation. See the Legal Code for further information.

Image source should be attributed as specified in the full catalogue record. If no source is given the image should be attributed to Wellcome Collection.



Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
<https://wellcomecollection.org>

the protein has been submitted to various fractionation procedures,

When acetic acid-soluble protein from ribosomes of intact *P. B. 100* is submitted to starch gel electrophoresis in the presence of 6 *M* urea at pH 5.6, a complex pattern of at least 20 bands appears on staining with amido black (Fig. 1). The possibility that aggregation may be responsible for the complexity of this pattern has been considered, but it appears most unlikely on the basis of the following results:

(a) When acetic acid-soluble protein, adsorbed on a column of carboxymethyl-cellulose²² in a solution of 0.01 *N* HCl in 6*M* urea (pH 3.32) at 2° is eluted by progressively lowering the pH to 2.50, the protein can be recovered in two distinct chromatographic peaks, I and II. Starch gel electrophoresis in 6 *M* urea at pH 5.6 of the material from the two peaks (recovered after extensive dialysis against water and freeze-drying) shows a separation into two distinct sets of bands, which to-

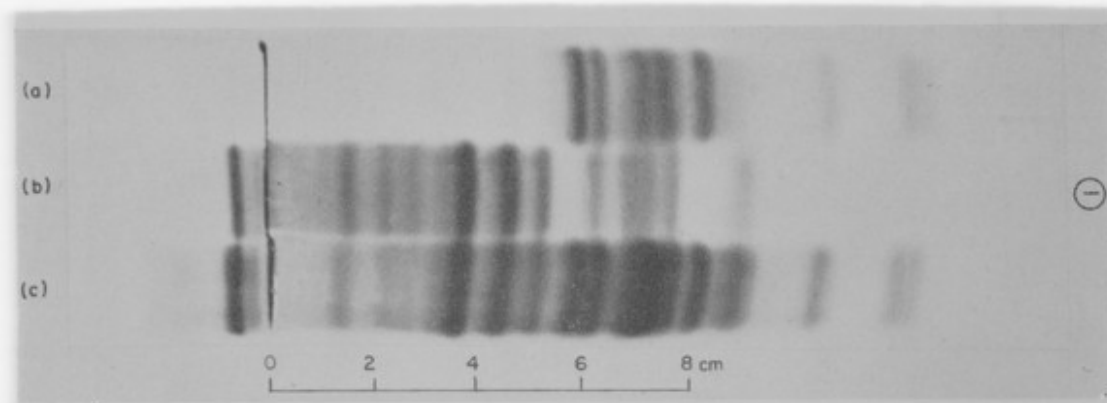


Fig. 2.—Starch gel electrophoresis in 6 *M* urea at pH 5.6 (for conditions, consult Fig. 1) of the materials from peaks I and II obtained when acetic acid-soluble protein is fractionated on carboxymethyl-cellulose under conditions described in the text. (a) is protein from peak II (2.5 mg); (b) is protein from peak I (2.5 mg); (c) is unfractionated acetic acid-soluble protein (3.5 mg). The bands in the overlapping region of (a) and (b) appear to be two distinct sets of bands, the combination of which accounts for the intense staining in the same area of the unfractionated protein. This apparent is ascribed to the influence of the carboxyl groups of the protein. While these were only partly ionized during chromatography in acid pH, they are fully ionized during electrophoresis at pH 5.6.

gether account for all the bands observed in the unfractionated protein (Fig. 2). The more basic bands are from the material in peak II, in accordance with its chromatographic behavior on carboxymethyl-cellulose.

(b) As a further control, the material eluted from carboxymethyl-cellulose in the system described above was subdivided into ten arbitrary fractions from successive portions of the effluent in the order of increasing basicity. Each of these fractions was submitted to starch gel electrophoresis in 6 *M* urea at pH 5.6. In spite of a considerable overlap of the bands from immediate neighboring fractions, a clear separation into small groups of bands, with increasingly basic properties from fraction 1 to 10, was observed. There was no apparent evidence of re-aggregation.

The proteins from peaks I and II, derived from chromatography on carboxy-