The heterocaryon is inoculated into a liquid medium of high osmotic concentration, lacking in the nutritional element required by the hyphal parent of the heterocaryon but supplemented with that required by the slime parent if it has one. High osmotic concentration is ordinarily obtained by adding 10 per cent sorbose to the standard medium. Growth in such liquid media consists of heterocaryotic hyphae and spheroplasts which are largely slime in composition. Hyphal growth is removed by filtration through glass wool and the suspension of spheroplasts is plated on an agar medium of standard osmotic concentration, supplemented, when necessary, to satisfy the growth requirement of the slime component. Persistent slime colonies are picked from the plates. It is sometimes advantageous to permit further growth of the spheroplast suspension, and to filter a second time before plating, as this frequently results in a pure stand of persistent slime. Caution: heterocaryons so far tested have all carried as in both components. Inasmuch as pure strains themselves produce some spheroplasts in liquid media of high osmotic concentration, behavior different from that described may be expected if as is present in only the slime component of a heterocaryon. (Supported in part by an N.S. F. Grant, G-6174, and in part by a U.S. P.H.S. Grant, N.I.H. GM-0965.)--Division of Biology, California Institute of Technology, Pasadena, California.

Fox, D. J. and Boulter, D. Rapid localization of proteins in chromatographic eluates. The customary procedure for establishing the elution position of proteins from chromatographic columns is to measure the \(E_{280}\) in a spectrophotometer. This procedure can become very laborious when the components are few in number and are widely separated on the elution curve. In such cases it has been found possible to localize the protein-containing fractions by a rapid visual examination under ultra-violet light from a Black Glass U.V. lamp in the dark. The proteins fluoresce vividly, usually a pale blue color, and the eye can detect any concentration that is measurable with an S.P. 500 spectrophotometer. This method is satisfactory even when the fractions are contained in pyrex test tubes. Once localized the absorption can be measured accurately in the spectrophotometer. Owing to the interference from other absorbing compounds, principally nucleic acids, it is customary to measure the extinction at 280 and 260 \(\text{m} \mu\) and make a Warburg-Christian correction (Warburg and Christian, Biochem. Z. 310, 384, 1941). We have found it profitable, when dealing with large numbers of fractions, to construct a Nomogram from the original Warburg and Christian figures and from this a table converting observed \(E_{280}\) and \(E_{260}\) to the value of \(E_{280}\) that the protein component alone would have given, thus eliminating any errors arising from the variation of aromatic amino acid composition inherent in direct conversion to mg. protein by the Warburg-Christian equation. The only assumption here is that the extraneous absorption is in fact due to nucleic acids or their components.

This corrected \(E_{280}\) may at any future time be converted to mg. protein when the conversion factor for the particular proteins are determined after purification.

Using this table, corrections of over 50% have been made to some peaks.--The Hartley Botanical Laboratories, The University, Liverpool.

Laycock, M. V., H. G. Kölmark and D. Boulter. The separation of malic dehydrogenase isoenzymes of Neurospora crassa by polyacrylamide gel electrophoresis. Using starch gel electrophoresis Tsao (Tsao, Science 136, 42, 1962) demonstrated that homogenates of Neurospora crassa contain at least four isoenzymes. This communication reports similar results using polyacrylamide gel electrophoresis. The advantages of the latter technique over starch gel electrophoresis for enzyme studies with dehydrogenases are a) electrophoresis time is 40 min. as opposed to 6-20 hr. using starch, b) polyacrylamide gels are smaller and require only a small volume of incubation medium which in this work may be expensive due to the requirement for nicotinamide adenine dinucleotide, c) shorter incubation time resulting in sharp, clearly defined bands, and d) ease of incubation anaerobically since several gels will readily fit into a Thunberg tube. Polyacrylamide gel electrophoresis was carried out according to the method of Ornstein and Davis (Ornstein and Davis, Disc Electrophoresis, Preprinted by Distillation Products Industries, Eastman Kodak Co., 1962) with the modification introduced by Fox, Thurman and Boulter (Fox, Thurman and Boulter, Biochem. J. 87, 29, 1963).