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Royse et al.

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[54] **AGAROSE GEL ELECTROPHORESIS TECHNIQUE FOR THE DETERMINATION OF AMYLASE ISOENZYMES**

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[52] **U.S. Cl.** ..... **204/182.8**; 201/299 R; 252/315.3; 435/22; 436/806

[58] **Field of Search** ..... 204/180 G, 299 R; 23/230 B; 435/22, 814; 436/806; 252/315.3

[56] **References Cited**

U.S. PATENT DOCUMENTS

3,497,437	2/1970	Louderback et al.	204/180 G
3,527,712	9/1970	Renn et al.	204/180 G
3,687,833	8/1972	Parcells et al.	204/180 G
3,912,610	10/1975	Lou	204/180 G
3,998,696	12/1976	Yomoto et al.	435/202
4,030,995	6/1977	Starkweather	204/180 G
4,209,372	6/1980	Bluestein et al.	204/180 G
4,246,084	1/1981	Gurske	204/180 G
4,454,161	6/1984	Okada et al.	426/549

FOREIGN PATENT DOCUMENTS

0870180	5/1971	Canada	204/180 G
0681362	8/1979	U.S.S.R.	204/180 G

OTHER PUBLICATIONS

Pierre Leclerc and Jean-Claude Forest, *Clinical Chemistry*, vol. 28, No. 1, 1982.

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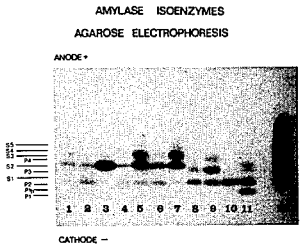
[57] **ABSTRACT**

Separation of all clinically relevant isoamylase bands including P_1 P_{1b}, P_2, P_3, P_4, S_1, S_2, S_3, S_4 and S_5 is achieved in a test in which a biological sample is electrophoresed on an agarose gel supporting a tris-sodium barbital-barbital buffer at a pH of between 8.4 and 9.2. The barbital anion concentration is between about 0.03 and about 0.08 M, the tris cation concentration is between about 0.03 M and about 0.07 M; and the sodium cation concentration is between about 0.03 M and about 0.07 M. Agarose is present in the gel at concentrations of between about 0.4 and about 1.5 weight percent.

14 Claims, 1 Drawing Figure