

DETERMINATION OF LYSOZYME IN PAPAYA LATEX PREPARATIONS

É. F. Redina,^a L. G. Mezhlum'yan,^a L. G. Bazhenov,^b
and P. Kh. Yuldashev^a

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The mucolytic enzyme lysozyme is present in preparations of papaya latex [1, 2]. Continuing work on the creation of medicinal preparations based on the proteolytic enzymes of the latex [3], we have determined their lysozyme contents by gel diffusion [4], based on the ability of lysozyme to cleave the β -1-4-glycosidic bond of the mucopolysaccharide layer of the cell wall of *Micrococcus lysodeikticus*. The method is characterized by high sensitivity and simple execution, error within 8-10% [4]. The reaction was conducted in an agar medium containing a suspension of killed microbe cells of *M. lysodeikticus* in Petri dishes. After its setting we cut wells in agar and added to them standard solutions of chicken lysozyme (6.25, 12.5, 25, 50, 100, and 200 μ g/ml in physiological solution, pH 6.4, in a volume of 8 ml), in order to construct a calibration curve, and also the preparations under investigation. After incubation in a thermostat at 37°C for 24 h, we measured the diameters of the zones of lysis of the microbial cells under the action of the lysozyme and determined the corresponding concentrations.

However, we obtained lower concentrations of lysozyme in the latex and in Lekozim than those given in the literature [1, 2], which may be due to the formation of complexes of the lysozyme with the proteins of the mixture being analyzed [2, 5]. In view of the fact that the method permits a comparative analysis of several samples on one plate, we took as a standard the known concentration of lysozyme in Lekozim — 16% in terms of protein [1]. Recalculated to a preparation containing 33% of protein, determined spectrophotometrically at 280 nm, this amounts to 5.3% of lysozyme. Other figures for percentage contents of lysozyme are given below:

Lekozim (the firm LEK, Yugoslavia, 33% of total protein)	5.3
Papaya latex (freeze-dried)	4.5
Kukumazim (principle)	9.2
Kukumazim (medicinal form, 25% total protein)	2.4

Thus, gel diffusion permits the determination of the lysozyme content of a mixture of plant proteins using only an analogous plant complex with a known lysozyme content as standard.

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a) Institute of the Chemistry of Plant Substances, Academy of Sciences of the Republic of Uzbekistan, Tashkent, fax (3712) 40 64 75. b) Surgical Scientific Center, Ministry of Health of the Republic of Uzbekistan, Tashkent, fax (3712) 77 27 32. Translated from Khimiya Prirodnykh Soedinenii, No. 5, pp. 764-765, September-October, 1997. Original article submitted November 3, 1995.