

A LIPASE FROM THE FUNGUS *Rhizopus microsporus*
STRAIN UzLT-1

K. Davranov and M. Rizaeva

UDC 582.282.23:517.153.2

The fungus *Rhizopus microsporus* was grown in 250-ml Erlenmeyer flasks in a medium of the following composition (%): maize extract 2, cottonseed oil 1, CaCO₃ 1.5.

The present paper gives the results of a study of the lipolytic enzymes (hydrolysis of glycerol esters, E.C. 3.1.1.3) in the culture liquid and in an isopropanol precipitate from the fungus *Rhizopus microsporus*, strain UzLT-1.

The lipase activity was determined by the method of Ota and Yamada [1] and was expressed in milliliters of 0.1 N alkali solution consumed in the titration of the fatty acids formed from 1 ml of culture liquid under the action of the lipase. The protein was measured by the biuret method, and also by the Warburg-Christian method [2]. An isopropanol powder was obtained by saturating the culture liquid with isopropanol (1:6 at +2°C). An extract was obtained by triturating 0.1 g of the isopropanol powder in 10 ml of distilled water or buffer. The extract was centrifuged at 15,000 × g at 2°C for 15 min. The supernatant liquid was investigated for its lipase activity (Table 1).

When the lipase activity was measured in the pH range from 3 to 11, two pH maxima were found. In the case of a 0.1 M phosphate-citrate buffer, the maximum activity appeared at pH 3.5-4.8 and 6-8, and in the case of a glycine buffer at 4-4.5 and 7.8-8.5. Gel filtration on Sephadex G-75 in 0.1 M phosphate-citrate buffer (pH 8.0) showed the presence of two protein components possessing lipase activity (see Fig. 1).

TABLE 1

Process	Amount of protein, mg	Activity		Yield (in %) on the:	
		specific	total	protein	activity
Culture liquid	8680	565,14	4905068	100	100
Precipitation with isopropanol (1:6)	3741	1106,8	4140538,8	43,8	84,5

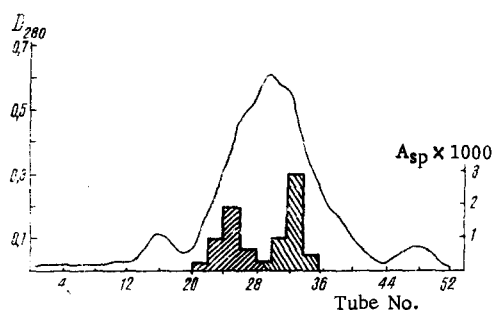


Fig. 1. Gel filtration on Sephadex G-75 of the protein fraction obtained by precipitation with isopropanol.

Department of Microbiology, Academy of Sciences of the Uzbek SSR. Translated from *Khimiya Prirodnikh Soedinenii*, No. 2, pp. 279-280, March-April, 1975. Original article submitted July 17, 1974.

©1976 Plenum Publishing Corporation, 227 West 17th Street, New York, N.Y. 10011. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, microfilming, recording or otherwise, without written permission of the publisher. A copy of this article is available from the publisher for \$15.00.

LITERATURE CITED

1. Y. Ota and K. Yamada, *Agric. Biol. Chem.*, 30, 351 (1966).
2. O. Warburg and W. Christian, *Biochem. Z.*, 310, 384 (1941).