

THE ESSENTIAL OIL OF *Petasites georgicus*

R. Ya. Toropkina, V. V. Orlovskii,
N. N. Chistova, and S. A. Minina

UDC 547.913

According to phytochemical analysis, the roots of *Petasites georgicus* Manden contain about 0.6% of essential oil [1]. The oil was isolated from the air-dry raw material by steam distillation. We have determined its physicochemical constants, the mean figures for which are given below: density 0.9305; ester number after acetylation 17.89; ester number 9.49; acid number 3.18; bp 239–251°C; n_D^{20} 1.5052; $[\alpha]_D^{20}$ –25.88° (toluene).

When it was chromatographed on plates with a fixed layer of silica gel–gypsum (6:1) in the n-hexane–ethyl acetate (9:1) system using iodine vapor as the revealing agent, the oil was separated into 13 components, 9 of which fluoresced in UV light before treatment with iodine vapor.

By fractional precipitation under conditions of cooling, one of the components of the essential oil with mp 125–126°C was isolated. When this was chromatographed on plates in parallel with the essential oil under the same conditions, it gave a spot with R_f 0.35. Qualitative reactions (TLC method) showed that this substance contained an alcoholic hydroxyl, a carbonyl group, and unsaturated bonds and belonged to the terpene series.

The elementary composition, melting point, molecular weight, and IR spectrum (in CCl_4) of the substance obtained corresponded to those given for the sesquiterpene alcohol isopetasol, which is a product of the decomposition of petasin. The latter was isolated by Swiss workers from *Petasites hybridus* Gaertn [2].

LITERATURE CITED

1. R. Ya. Toropkina, S. A. Minina, and E. A. Rezvaya, Tr. Leningradskogo Khimiko–farmatsevticheskogo In-ta, 24, 23 (1969).
2. A. Aebi, T. Waaler, and J. Büchi, Pharm. Weekblad, 93, 397 (1958).

Leningrad Chemical and Pharmaceutical Institute. Translated from *Khimiya Prirodnikh Soedinenii*, No. 5, pp. 650–651, September–October, 1972. Original article submitted December 20, 1971.

© 1974 Consultants Bureau, a division of 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.