

It was found that the main component of the essential oil (~60%) is camphor mp 177°-178° C (subl.). A mixture with an authentic sample of camphor gave no depression of the melting point. The IR spectrum of the substance with mp 177°-178° C was identical with that of camphor [1].

The monoterpene fraction of the essential oil contained myrcene (saponification product of its adduct with maleic anhydride, mp 120° C), camphene (hydration product—*isoborneol*—with mp 211°-212° C), and *p*-cymene. The IR spectra of the compounds isolated from the essential oil coincided with the IR spectra of myrcene, camphene, and *p*-cymene given in the literature [1].

The results obtained were confirmed by gas-liquid chromatography. In addition, together with the hydrocarbons mentioned above, this fraction of the oil was found (but only by GLC) to contain α -pinene, β -pinene, limonene, γ -terpinene, β -phellandrene (?) and two unidentified hydrocarbons.

We also established the presence in the essential oil of 1,8-cineole, with bp 62° C (14 mm); d_4^{20} 0.9230, n_D^{20} 1.4600; adduct with resorcinol, mp 80° C. In addition, the oil contains very small amounts of sesquiterpene alcohols which we have not studied.

REFERENCES

1. I. Pliva, M. Horak, V. Herout, and F. Šorm, Die Terpene. Sammlung der Spektren und Physikalischen Konstanten. Teil II. Monoterpene, Akademie-Verlag, Berlin, 1963.

26 March 1968

Komarov Botanical Institute AS USSR

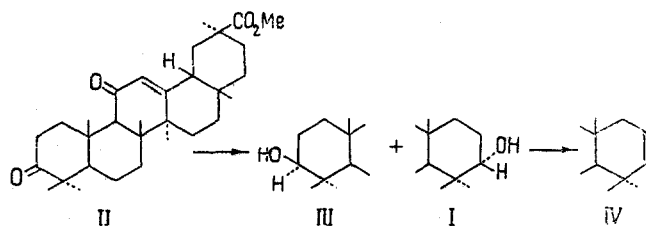
UDC 547.597

DERIVATIVES OF 3 α -GLYCYRRHETIC ACID

G. A. Tolstikov, L. F. Tolstikova, and M. I. Goryaev

Khimiya Prirodnikh Soedinenii, Vol. 4, No. 5, pp. 322-323, 1968

We have obtained methyl 3 α -glycyrrhetate (I) by the reduction of methyl 18 β H-3-oxoglycyrrhetate (II) with aluminum isopropoxide. The ratio of the yields of (I) and its 3 β -epimer (III) was 6 : 4. Methyl epiglycyrrhetate has mp 217°-218° C; UV spectrum: $\lambda_{\max}^{\text{ethanol}}$ 250 m μ (log ϵ 4.06); IR spectrum: ν 1728, 1665, and 1620 cm $^{-1}$. The substance gives an acetate with mp 220°-220.5° C; IR spectrum: ν 1257 cm $^{-1}$ (OAc).



A proof of the axial orientation of the hydroxy group in (I) is the production of a Δ^2 -compound (IV) with mp 202°-204° C on dehydration with phosphorus pentachloride in toluene. The structure of (IV) is confirmed by its IR spectrum, which contains a strong band with a frequency of 731 cm $^{-1}$, characteristic for a *cis*-disubstituted double bond.

25 November 1967

Institute of Chemical Sciences AS KazSSR