Identity of "Zymonic Acid" with a Pyruvate Derivative

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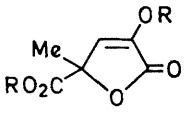
Summary The structure of the methyl ester-enol ether derivative of zymonic acid has been proved by synthesis.

WE report a revision of the structure of zymonic acid to (**1**), a compound previously reported by Wolff.[1] Incorrect structures were suggested at the time of isolation[2] and upon subsequent u.v. experiments;[3] we assumed the latter structure to be correct in a preliminary account of biosynthetic studies.[4] Treatment of (**1**) with diazomethane gave (**2**), which was identical with the methyl ester-enol ether of zymonic acid as shown by u.v., i.r., n.m.r., g.l.p.c., m.s., and t.l.c. in several systems. Our previous hypothesis[4] and experiments are therefore both unacceptable. Our observation that pyruvic acid in concentrations of 0·2—2%, when treated with an excess of $CaCO_3$ at room temperature for 2 days, yields on work-up amounts of (**2**) comparable with those obtained from cultures, strongly suggests that (**1**) is nothing more than a chemical artefact from pyruvate. This is further supported by the enzymatic[5] detection of *ca.* 0·1% pyruvate in culture filtrates.



(1) R = H
(2) R = Me

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