

COMMENTS

BULLETIN OF THE CHEMICAL SOCIETY OF JAPAN, VOL. 51 (3), 955 (1978)

The Condensation of Nitromethane with Ketoses

Gerhardus J. LOURENS

Adcock-Ingram Research, P. O. Box 5932, Johannesburg 2000, Republic of South Africa

(Received December 16, 1977)

A recent paper,¹⁾ published in *Bull. Chem. Soc. Japan* and describing an alleged new synthesis of branched-chain deoxy nitro and amino sugars, has prompted this reply. It seems quite unlikely that the author, in carrying out a proper scientific literature search, could have overlooked my original paper on this matter, as it is well documented in the chemical literature^{2,3)} and has been reviewed.⁴⁾

In any event, the unusual identity of the two papers^{1,3)} points to the fact that Abdel-Rahman must have been in possession of the paper published in *Carbohydrate Research*. In comparing the two papers it is quite clear that most of the sentences in the entire paper were copied exactly. Furthermore, both papers describe the addition of nitromethane to 1,2-*O*-isopropylidene-5-*O*-trityl- α -D-erythro-pentafuranos-3-ulose in nitromethane as the solvent, and in the presence of sodium hydride at -20°C , as well as subsequent reactions carried out on the product obtained.

In addition, the yields, melting points, optical rotations, infrared and NMR data correspond exactly with those given in the original paper,³⁾ which is quite unusual. If the yields given by Abdel-Rahman, which are the same as given in the *Carbohydrate Research* paper, are recalculated on the basis of the changed quantities used, one finds:

Compound	Yield recalculated	Given ¹⁾	Literature ³⁾
2	71.6%	76%	76%
5	53.3%	58%	58%
6	75.3%	82%	82%

These figures speak for themselves.

In the changed description of the preparation of Compound **3**, the author did not realise that the chromatography step, as described, was absolutely necces-

sary in order to purify the product from the less polar triphenylmethane formed in the reaction. Perhaps the most unbelievable feature about this paper is the fact that Abdel-Rahman was able to obtain a correct elementary carbon, hydrogen and nitrogen analysis of $\text{C}_{12}\text{H}_{16}\text{NO}_9$, which is in fact the $\text{M}^+ - 15$ mass for Compound **3**; in my paper³⁾ an accurate determination of the mass was done on the base peak of $\text{M}^+ - 15$, which calculated for $\text{C}_{12}\text{H}_{16}\text{NO}_9$.

Finally, no literature references other than those listed⁵⁾ in the original article,³⁾ were included; this shows that more recent literature had not been searched. Several similar additions with nitromethane, though, have been described in recent years.⁶⁾

References

- 1) M. M. A. Abdel-Rahman, *Bull. Chem. Soc. Jpn.*, **50**, 1619 (1977).
- 2) G. J. Lourens, *Tetrahedron Lett.*, **1969**, 3733; *Chem. Abstr.*, **72**, 21890s (1970).
- 3) G. J. Lourens, *Carbohydr. Res.*, **17**, 35 (1971); *Chem. Abstr.*, **74**, 142252 (1971).
- 4) "Carbohydrate Chemistry," Vol. 3, Senior Reporter R. D. Guthrie, The Chemical Society, London (1970), p. 122.
- 5) Omitted: H. P. Albrecht and J. G. Moffatt, *Tetrahedron Lett.*, **1970**, 1063, which appeared simultaneously with the original communication.¹⁾
- 6) S. W. Gunner, R. D. King, W. G. Overend, and N. R. Williams, *J. Chem. Soc., C*, **1970**, 1954; A. Rosenthal and K. -S. Ong, *Can. J. Chem.*, **48**, 3034 (1970); J. Yoshimura, K. Kobayashi, K. Sato, and M. Funabashi, *Bull. Chem. Soc. Jpn.*, **45**, 1806 (1972); J. Yoshimura, K. Sato, K. Kobayashi, and C. Shin, *ibid.*, **46**, 1515 (1973); A. Rosenthal and G. Schöllnhammer, *Can. J. Chem.*, **50**, 1780 (1972); W. P. Blackstock, C. C. Kuenzle, and C. N. Eugster, *Helv. Chim. Acta*, **57**, 1003 (1974).

A copy of the comment of Lourens was sent to Abdel-Rahman in December 1977, but his reply does not arrive yet.
The Editors