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Anomeric Mixtures of *D*-Xylo- and *D*-Lyxo-Furanonucleosides: Correlations between their Structures and their Retention Times in HPLC Analysis

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ANOMERIC MIXTURES OF D-XYLO-AND D-LYXO-FURANONUCLEOSIDES :
CORRELATIONS BETWEEN THEIR STRUCTURES AND THEIR RETENTION
TIMES IN HPLC ANALYSIS

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ABSTRACT. Rationalization of the intrinsic structural factors which can influence retention times of anomeric D-xylo- and lyxofuranonucleoside analogues in reversed-phase high-performance liquid chromatography (HPLC) has been established.

We have previously reported the synthesis and biological evaluation of α and β -D-xylo-¹ and lyxofuranonucleosides² of the five naturally occurring nucleic acid bases as chemotherapeutically active agents. Here we present recent results³ concerning the HPLC analysis of reconstituted mixtures of these nucleoside analogues.

From a detailed study of various parameters (size of support particles, nature and pH of the mobile phase, temperature) we have been able to establish optimized separation conditions, using a Waters Assoc. instrument.

Thus the resolution of the twenty derivatives in the D-xylo- and D-lyxose series is optimum on a Radial-Pak C₁₈-5 μ m column (100 x 8 mm ID, in RCM 100), at 17.5°C, with the following program : first isocratic eluent (solvent A : 0.1M sodium phosphate buffer, pH 4.73) during 12 mn.;

then linear gradient from solvent A to 80 % solvent A - 20% solvent B (solvent B : mixture water-methanol, 1/1, v/v) during 38 mn.

We found that : i) for a same base and anomery, all lyxo- derivatives eluted before their xylo-isomers ; and in each xylo- and lyxo-series : ii) α -anomer is eluted before the β -anomer for a given base ; iii) the elution order was always C < U < G < T < A.

From this study, a rationalization in term of the contributions due to the natures of base, sugar and anomeric configuration, allowed a comparison between the retention times of all studied compounds.

Utilization of these results should permit the prediction of the best separation conditions for the two other series of D-pentofuranonucleosides (ribo- and arabino-), as well as for various series of nucleoside analogues (with deoxy and halogeno sugar moieties or modified bases).

REFERENCES

1. G. GOSSELIN, M.-C. BERGOGNE, J. DE RUDDER, E. DE CLERCQ and J.-L. IMBACH, J. Med. Chem., **29**, 203 (1986).
2. G. GOSSELIN, M.-C. BERGOGNE, J. DE RUDDER, E. DE CLERCQ and J.-L. IMBACH, J. Med. Chem., *in press* (1987).
3. A. POMPON, G. GOSSELIN, M.-C. BERGOGNE and J.-L. IMBACH, J. Chromatogr., *in press* (1987).