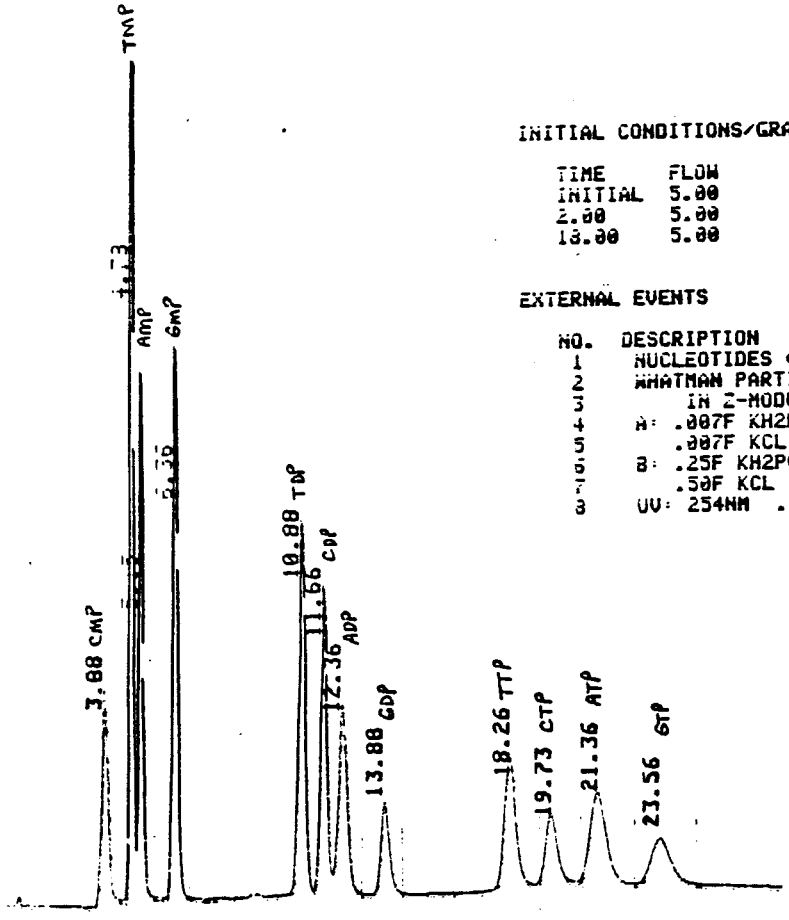
Waters
Lab Highlights
An Internal Communication of Applications and Techniques
Volume 2, No. 2
NUCLEIC ACIDS
*82.600.066.011.031
(.038)

ANALYSIS OF NUCLEOTIDES USING Z-MODULE™ SYSTEM

The Z-Module™ System is a Radial Compression Module designed to be used with both WATERS™ existing Radial-PAK™ cartridges and with WATERS™ line of irregular shaped particles. Radial-PAK™ cartridges custom packed with Whatman Partisil-10 SAX packing is a standard cartridge available from WATERS™.

An important application of the SAX packing is in the area of nucleotide analyses. Nucleotides are the monomeric units of nucleic acid molecules and participate in nearly all biochemical processes. Nucleotide profiles utilizing Whatman steel columns have been reported in the literature (1). Typical analysis times are 50 minutes per sample or longer. By taking advantage of the high flow rate and low back pressures on the Z-Module™ System and SAX cartridge, analysis times per sample can be cut in half. The following chromatogram illustrates the profile obtained for 12 nucleotides of interest to biological researchers involved in nucleic acid chemistry. High flow rate gradients are a definite advantage of RCSS (2).



INITIAL CONDITIONS/GRADIENT TABLE

TIME	FLOW	%A	%B	%C	CURVE
INITIAL	5.00	100	0	0	*
2.00	5.00	100	0	0	06
18.00	5.00	0	100	0	06

EXTERNAL EVENTS

NO.	DESCRIPTION
1	NUCLEOTIDES (1 NMOLE EA.)
2	WHATMAN PARTISIL-10 SAX
3	IN Z-MODULE
4	A: .007F KH2PO4
5	.007F KCL PH 4.00
6	B: .25F KH2PO4
7	.50F KCL PH 5.00
8	UV: 254NM .05AUFS

*Replaces 82.600.066.011.030
(.038)

Robert Burgoyne 2/23/82

(1) M. McKeag & P. R. Brown, J. Chromatogr. 152 (1978) 253-254
(2) J. Korpi & B. Bidlingmeyer, American Laboratory, June 1981, 110-117