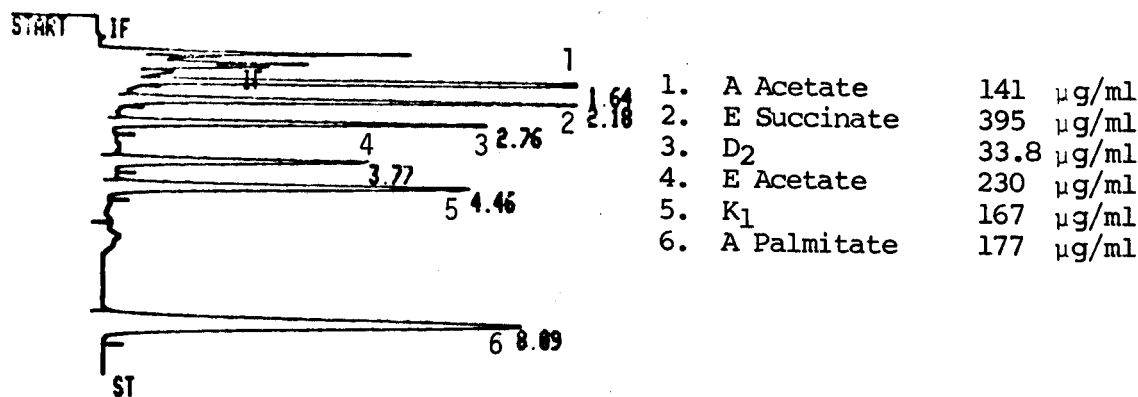


## ANALYSIS OF FAT- AND WATER-SOLUBLE VITAMINS IN PHARMACEUTICAL PREPARATIONS I: CHROMATOGRAPHIC METHODOLOGY

The use of high performance liquid chromatographic techniques for the analysis of vitamin constituents has advantages over alternative assay methods. The traditional methods have relied upon different biological or chemical techniques for each vitamin. Not only are these methods relatively costly on a routine basis, but they are also subject to poor selectivity and accuracy caused by interfering species in the sample. HPLC is advantageous for vitamin analysis since the separation eliminates interfering substances and several vitamin compounds are measured simultaneously.

The QA-1™ Analyzer is capable of generating rapid and reproducible separations and quantitation for selected groups of vitamins in multivitamin formulations. Chromatographic conditions have been developed for both fat- and water-soluble vitamins which utilize the same column so that only the mobile phase and detector wavelength need be changed to convert from one method to the other. Sample preparation techniques documented in the literature can be used prior to chromatographic analysis.

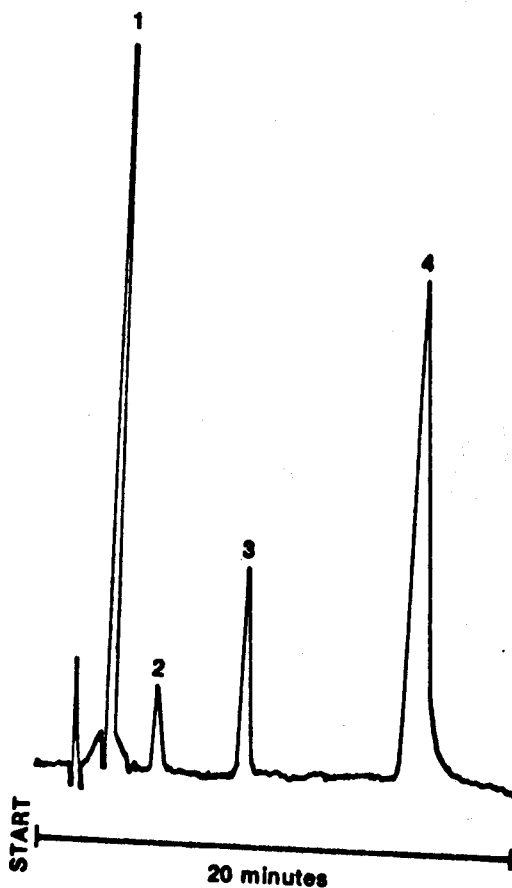
### FAT-SOLUBLE VITAMIN STANDARDS



- Injection volume: 10 μl
- Column: Radial-PAK™ C<sub>18</sub>, 5μm, 8mm X 10cm
- Mobile Phase: CH<sub>3</sub>CN/THF/H<sub>2</sub>O, (55:37:8)
- Flow Rate: 4.0ml/min
- Flow Volume: 40ml
- Wavelength: 280nm
- Attenuation: 2 + 5

WATER-SOLUBLE VITAMIN STANDARDS

- Injection Volume: 10  $\mu$ l
- Column: Radial-PAK™ C<sub>18</sub>, 5 $\mu$ m, 8mm X 10cm
- Mobile Phase: 25% CH<sub>3</sub>OH  
75% H<sub>2</sub>O containing 60% 0.01M PICR Reagent B7  
and 40% RCSS Reagent D-4
- Flow Rate: 2.0ml/min
- Flow Volume: 40ml
- Wavelength: 254nm
- Attenuation: 2 + 4



1. Niacinamide	78.1 $\mu$ g/ml
2. Pyridoxine (B <sub>6</sub> )	48.5 $\mu$ g/ml
3. Riboflavin (B <sub>2</sub> )	8.5 $\mu$ g/ml
4. Thiamine (B <sub>1</sub> )	54.3 $\mu$ g/ml