

Rapid Analysis of Vitamins & Carotenoids in Nutritional Supplements

MICRA NPS® is a breakthrough in fast HPLC. *NPS* is ultra-pure, highly uniform non porous silica spheres which provide the LC chromatographer greatly improved mass transfer and lower detection limits. Coupled with enhanced stability and dramatically reduced solvent usage, *NPS* is the ideal analytical column to meet the ever increasing demands placed on today's analytical labs - High productivity at a lower cost.

**Results Using
MICRA NPS TAS
on Carotenoids
Reduced Analysis
Times Over 20x,
From 65 minutes
to 3 minutes.**

Carotenoids and the antioxidant vitamins, such as A, C, and E have been linked to a reduced incidence in some forms of cancer. Increased interest has necessitated development of adequate analytical methodologies for both the qualitative and quantitative determination of all the analytes. There are many published methods for the analysis of carotenoids and both the water and oil soluble vitamins. HPLC has proven to be the most efficient by allowing for the separation and quantification of a large number of carotenoids. Some HPLC published methodologies can have run times of up to 70 minutes and excessive solvent consumption. Small particle size *NPS* HPLC columns were investigated to minimize these issues.

Figure 1. Analysis of Standard Carotenoids Using NPS TAS

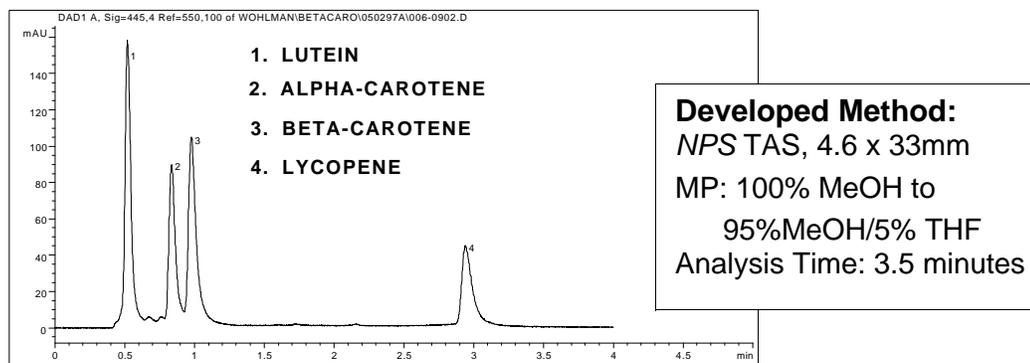
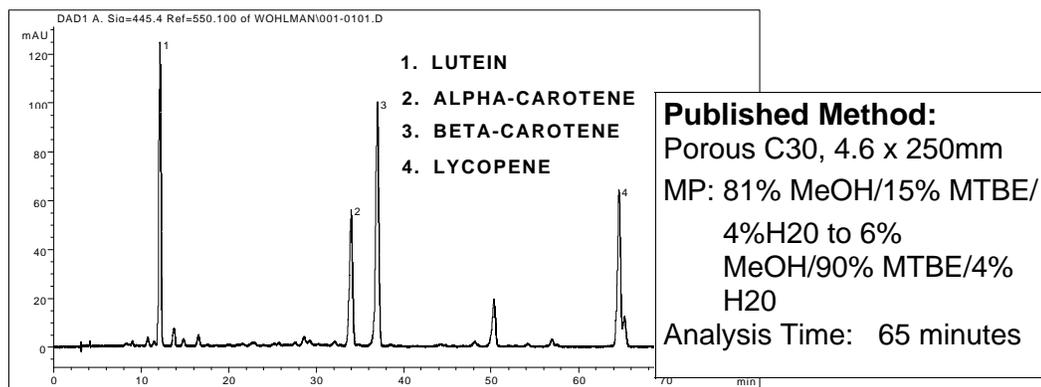


Figure 2. Analysis of Standard Carotenoids Using Porous C30



Think small

Think fast

Think *NPS*[®]

A poster presentation which includes this data was presented at the annual 1997 AOAC International Meeting and Exposition in San Diego, California. The goals of the study were to develop HPLC methodologies for the analysis of the important carotenoid and vitamin standards, to analyze nutritional supplements for water and oil soluble vitamins using C18 or *NPS* TAS and to demonstrate the speed of the *NPS* columns by comparing results to those of conventional porous silica columns.

The results of the study were that *NPS* HPLC columns provide an outstanding option for the challenge of carotenoid and water soluble vitamin analyses, yielding excellent chromatographic results at substantially faster analysis times.

For a reprint of the AOAC presentation, request poster #PO10.

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