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**NATURAL SUBSTANCE HPLC OVER SEMIPERMEABLE SURFACE COLUMNS:
RED AND WHITE WINES**

The following study was conceived and carried out by T. J. Szczerba in the Regis Technologies laboratories.

Analytes: White wine (Fig. 1); red wine (Fig. 2).

Sample Size: 50 μ L

Column: C8 SPS, 15 cm x 4.6 mm I.D., 5 μ 100 \AA pore diameter

Regis Product Number: 785108

Mobile Phase: A: Water, pH 2.5; B: Acetonitrile Flow rate: 1.0 mL/min

Gradient: 99% A to 50% A in 30 min

Detection: 214 nm, 0.8 AUFS

Discussion: Until the advent of restricted-access media (RAM), examining natural mixtures by direct injection into HPLC columns presented difficulties--most notably, the high polymers in natural mixtures soon ruin the column (1-3). Avoiding the difficulties by simplifying the mixtures before injection, as by extraction, would change their composition (for wine phenolics, for instance, see 4, 5; but in general, see 1, 3).

Although RAM HPLC columns accept direct injection, early RAM columns lacked the high efficiency requisite for the examination of natural mixtures (6). The 65,000-plate-per-meter efficiency of the more recent RAMs has proved quite acceptable (7-9). In particular, the SemiPermeable Surface (SPS) has shown not only a range of selectivities, high column efficiency, and excellent column life (7, 10), but also a surprising tolerance to the direct injection of unfiltered materials.

In this Note, we report impressive and interesting separations of two unfiltered wines--one white (Figure 1), one red (Figure 2)--that had been directly injected into an unguarded SPS column. We hope wine researchers (see, for example, 11, 12) will find useful the SPS properties thus demonstrated.

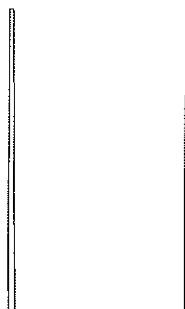


Figure 1. Although the chromatogram of white wine is considerably simpler than that of red, nevertheless the components are by no means completely resolved.

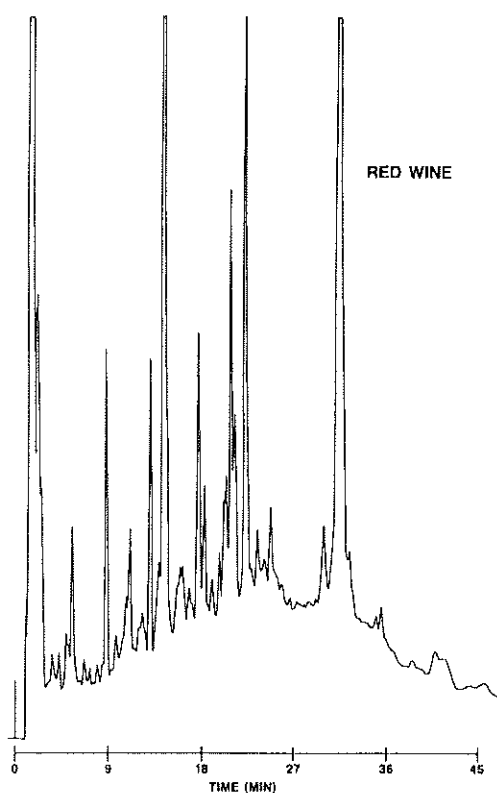


Figure 2. Red wine. (Figure reproduced from ref. 7 by permission of the authors and Marcel Dekker, Inc.)

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