

hydrochloric acid to the sample. A 2- $\mu$ l injection now resulted in a decrease of the retention of DMP from  $k' = 20$  to  $k' = 14$ , with a simultaneous 14-fold increased plate number. This result agrees with the fact that nitrate ions generally possess a higher affinity to anion-exchange materials than chloride ions [15] and suggests that the observed peak compression is caused by a displacement effect.

*Hydrophobic interaction: influence of organic modifier.* In order to explore the general benefit of the peak-compression effect for degradation products of nerve agents, other alkyl methylphosphonic acids were also tested. Alkyl methylphosphonic acids with a carbon number of more than two cannot be eluted from the PRP-X100 column with 0.5% formic acid in water as eluent [10]. The experiments were therefore carried out with water containing 3%

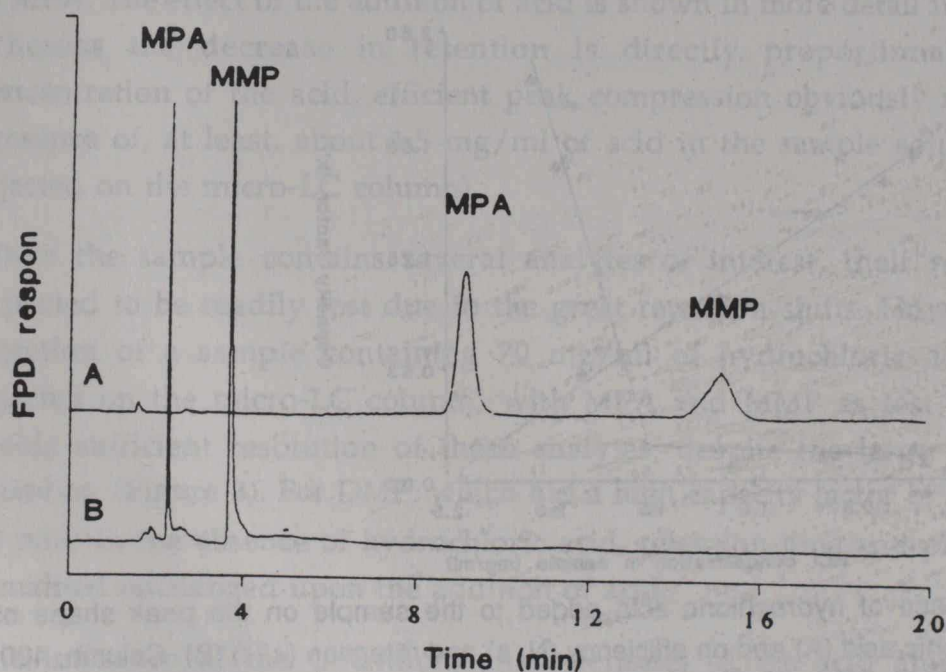


Fig. 3. Micro-LC-FPD chromatogram of methylphosphonic acid (MPA) and monomethyl phosphoric acid (MMP); (A) without and (B) with 70 mg/ml of hydrochloric acid added to the sample. Column, 300 mm x 0.32 mm i.d. PRP-X100; injection, 2  $\mu$ l; eluent, 0.5% formic acid in water; flow rate, 15  $\mu$ l/min.