

[J. Mol. Struct., 245, 21-27 (1991)]

[Lab. of Instrumental Center]

**Vibrational and NMR Spectra of Phenylpyruvic Acid and Its Salts  
in Aqueous Solution.**

KAZUHIKO HANAI\*, SATOSHI KAWAI, AKIO KUWAE

The IR, Raman and NMR spectra of phenylpyruvic acid and its sodium and lithium salts were recorded in aqueous solution. The spectral data indicate that the acid exists mostly in the hydrated keto form (*gem*-diol form) in acidic solution and that the sodium and lithium salt hydrates take predominantly the normal keto form in aqueous solution in contrast with those in the solid state. Also the solutions of the acid and the salts contain a small amount of the enol form. A solvent isotope effect, *i.e.*, the enol content differs between the H<sub>2</sub>O and D<sub>2</sub>O solutions of the sodium salt, was found.

[J. Chromatogr., 585, 318-321 (1991)]

[Lab. of Instrumental Center]

**High-Performance Liquid Chromatographic Separation of  
*p*-Hydroxyphenylpyruvic Acid.**SATOSHI KAWAI, KAZUHIKO HANAI\*, KATSUHIKO ITO,  
SATOSHI KITAHARA, AKIO KUWAE

This paper reports the development of a reliable method for the separation and determination of *p*-hydroxyphenylpyruvic acid by high-performance liquid chromatography. Three peaks were observed on the chromatogram, and identified as the keto-enol tautomers and the decomposition product, *p*-hydroxybenzaldehyde. The enol form and *p*-hydroxybenzaldehyde were determined without derivatization and the keto form as its oxime from their peak heights by comparison with those of known amounts of the enol form, *p*-hydroxybenzaldehyde and the oxime standard of the keto form.

[Shoyakugaku Zasshi, 45, 24-28 (1991)]

[Lab. of Herbal Garden]

**Pharmacognostical Studies of Plantaginis Herba (VII) on the  
Phenylethanoid Contents of *Plantago* spp.**YUKIO NORO, YOUICHI HISATA, KAZUYO OKUDA,  
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EIJI SAKAI, SANSEI NISHIBE and MICHIKO SASAHARA

Seven species of *Plantago* spp. and 9 samples of Plantaginis Herba on the market were quantitatively analyzed for their phenylethanoid glycoside contents. They might be roughly divided into two groups, *i.e.* one mainly containing plantamajoside and the other containing acteoside. The species having fibrous roots, *i.e.* *P. asiatica* (*P. asiatica* f. *paniculata*), *P. major*, *P. japonica* and *P. hostifolia* belonged to the former group, and the species having tap roots, *i.e.* *P. camtschatica*, *P. depressa*, *P. lanceolata* and *P. virginica* belonged to the latter group. In each species, the amounts of these compounds contained (%) were larger in the young leaves and young spikes.