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### **Keto-Enol Tautomerism and Vibrational Spectra of Phenylpyruvic Acids.**

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The keto-enol tautomerism of phenylpyruvic acid, *p*-hydroxyphenylpyruvic acid, and salts of the former compound was investigated by IR and Raman spectroscopy. The observation of the very strong Raman C=C band around 1660 cm<sup>-1</sup> indicates that these acids take the enol form in the solid state. The Raman spectra of the salts do not exhibit any C=C bands, suggesting their existence in the keto form. However, no keto C=O band is observed in the IR spectra of the hydrated sodium and lithium salts, whereas the typical C=O band is found in the anhydrous sodium salt and the potassium and calcium salts. The drastic changes in the IR spectrum of the hydrated sodium salt on dehydration and in that of the lithium salt on O-deuteration show that these hydrated salts have the *gem*-diol structure in the solid state.

[Shoyakugaku Zasshi, **43**, 55 (1989)]

### **Pharmacognostical Studies of Angelicae Radix(1) Phthalide Content of Wild *Angelica* Strains.**

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In the rocky area towards the summit of Mt. Ibuki, a wild strain of *Angelica acutiloba* grows, called "Ibuki-tôkis" on the market. In this area, Ibuki-tôki is said to be more fragrant than other tôkis. We collected several wild strains from Mt. Ibuki Kuguno, Asuke etc. We then evaluated these wild strains by measuring their essential oil(ligustilide)content. Generally, the root of *Angelica* spp. is used as medicine. But, ligustilide content of this plant was higher in the leaves than in the roots. Around Mt. Ibuki, the whole plant of *Angelica acutiloba* is used as bathing agent in the folk medicine from old time. This study partly supports this folk medicine.

[Shoyakugaku Zasshi, **43**, 93 (1989)]

### **Seasonal Variation on Leaf Morphology of Cultivated *Geranium nepalense* and *G. thunbergii*.**

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*Geranium nepalense* is similar to Genno-shôko(*G. thunbergii*) as regards its morphology. Whether the two plants are the same or different has long been a matter of discussion. *G. nepalense* is known to be clearly distinguished from *G. thunbergii* microscopically, as *G. nepalense* is characterized by the pattern of the seedcoat, long non-glandular hair and the papillae on the surface of the filament. In this report, we made a microscopic observation of the leaves of the two plants in each season. Epidermal cells were variable, and regular characteristics were found in the densities of stoma and non-glandular hair: *G. nepalense* had few stomata on the upper epidermis and *G. thunbergii* had few non-glandular on the lower epidermis.