

[Forensic Sci. Int., 87, 85-97 (1997)]

[Lab. of Hygienic Chemistry]

Analysis of Wool Fiber by Alkali-catalyzed Pyrolysis Gas Chromatography.Yuzi TAKEKOSHI, Kiyohito SATO, Susumu KANNO, Shoji KAWASE, Tadashi KIHIO*
and Shigeo UKAI

Compared with conventional non-catalyzed pyrolysis gas chromatography (PyGC), the alkali-catalyzed PyGC was found to greatly improve the detection limit of wool fiber and make it possible to analyze very minute samples. The alkali-catalyzed PyGC presented here has been shown to be applicable to minute thermally-denatured samples of wool fiber which cannot be identified successfully by morphological inspection using a microscope or by using Fourier-transform infrared microspectroscopy. Furthermore, the present PyGC method was successfully used for several protein samples and was shown to be useful for analysis of proteins other than wool fibers by using different special pyrograms reflecting different amino acid compositions.

[Biosci. Biotech. Biochem., 61, 1924-1925 (1997)]

[Lab. of Hygienic Chemistry]

Growth Suppressing Activity for Endothelial Cells Induced from Macrophages by Carboxymethylated Curdlan.

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A carboxymethylated derivative of a linear (1→3)- β -D-glucan (CMCD) from *Alcaligenes faecalis* var. *myxogenes* acted directly on mouse peritoneal macrophages and mouse lymphoma P388D1 cells, and induced a growth suppressing activity for bovine artery endothelial cells (BAEs) from themselves at a concentration of 100 μ g/ml. The suppressing activity was also detected in the mouse serum administered as an i.p. injection of CMCD at a dose of 100 mg/kg, suggesting that the growth suppressing activity was induced from macrophages potentiated by CMCD *in vivo*.

[Biochim. Biophys. Acta, 1336, 425-433 (1997)]

[Lab. of Pharmaceutics]

Purification and Characterization of Prostate Specific Antigen from Human Urine.

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Prostate specific antigen (uPSA) was purified to homogeneity from human urine using SuperQ-Toyopearl, Sulfate-Cellulofine, Phenyl-Toyopearl, CM-Sephadex, anti-urokinase IgG Sepharose and Sephadex G-100. The purified uPSA gave a major band at 32.9 kDa on SDS-PAGE under the reduced condition. However, it shows multiple bands on native PAGE. Substrate specificity of purified uPSA is identical with that of PSA from human seminal plasma and uPSA shows the kallikrein and chymotrypsin-like activities. On the analysis of N-terminal amino acid, two amino acid residues at N-terminal position of uPSA were detected and other amino acid sequence of uPSA was identical with that of sPSA. In addition, we isolated the multiple components of uPSA using anion-exchange chromatography. They were almost the same in amino acid composition and N-terminal amino acid sequences and showed differences in lectin-blotting pattern.

[Biol. Pharm. Bull., 20, 71-75 (1997)]

[Lab. of Pharmaceutics]

Purification and Characterization of Pranlukast Hydrolase from Rat Liver Microsomes: The Hydrolase is Identical to Carboxylesterase pI 6.2.Libiao LUAN, Tadashi SUGIYAMA, Satomi TAKAI, Yoshiko USAMI,
Tetsuo ADACHI, Yoshihiro KATAGIRI and Kazuyuki HIRANO*

Two carboxylesterases with pI 6.0 and 6.2 derived from rat liver microsomes were purified. The two isozymes were remarkably different in substrate specificity, but they had equal enzymatic activity for α -naphthyl acetate and were inhibited equally by phenylmethylsulfonyl fluoride and bis-(4-nitrophenyl) phosphate. Carboxylesterases pI 6.0 and 6.2 are identical to the enzymes referred to as hydrolase A and B, respectively, from the results of amino acid sequence analyses. Pranlukast was effectively hydrolyzed by carboxylesterase pI 6.2 but not by the pI 6.0 enzyme, and the difference in the pranlukast metabolism between the human and the rat could be explained by the substrate specificity of carboxylesterase. Furthermore, prodrugs of angiotensin converting enzyme inhibitors were found to be converted to the active drugs after hydrolysis by the carboxylesterases pI 6.0 and 6.2.