resolution between each branched PEG (MW 20 or 40 kDa)-conjugated IFN species as well as the native IFN. The total amount and distribution of PEG-IFN species were directly measured and the relative standard deviation (RSD) was below 5%. The mono-PEG-IFN conjugates were isolated by ion-exchange chromatography and also characterized by MALDI-TOF MS. CE-SDS-NGS provides a novel approach for the analysis of PEGylated IFN and shows the advantages of speed, high resolution, automation, and quantitation over SDS-PAGE.

[PD4-37] [10/18/2002 (Fri) 13:30 - 16:30 / Hall C]

Development of Immunostrip for DDT Detection

Hong Ji Youn○, Kim Joung-Hyun, Lee Eun Ah, Choi Myung Ja

Bioanalysis & Biotransformation Research Center,
Korea Institute of Science & Technology, Seoul 136-791, Korea
Department of Chemistry, Seoul Women's University, Seoul, 139-774, Korea

To develop immunostrip of DDT (4,4'-dichlorodiphenyl-2,2,2-trichloroethane) and its metabolites, DDT derivatives (DDA-, DDHP-, DDCP-, DDHH-, and DDHHAP-) were conjugated to carrier proteins (OVA and BSA) and three DDT derivatives (DDA, DDHP, DDCP) were conjugated to KLH for the use of coating ligand and immunogen, respectively. To screen the immunoreactivity of antibody to DDT derivatives, the coating ligand was evaluated by a competitive ELISA and DDHP-OVA was selected. Three polyclonal antibodies (DDA-1, DDHP-2, DDCP-3) were purified using protein A affinity column for the preparation of immunostrip. The immunostrip was assembled using a combination of membranes, 17 Chro cellulose membrane (sample pad), glassfiber, polyester supported nitrocellulose membrane, 17 Chro cellulose membrane (absorbance pad), in the listing order. DDT polyclonal antibodies (DDA-1, DDHP-2, DDCP-3) labeled with colloidal gold was applied on glassfiber membrane as a tracer. DDHP-OVA and second antibody (anti-rabbit IgG) were immobilized on the result line and the control line of NC membrane, respectively. As a result, the membrane strip could detect 30 ppm of DDT derivative mixture using 8.4 ug DDCP-3 antibody labeled with colloidal gold, 2.8 ug of DDHP-OVA on the result line and 150 uL of sample.

[PD4-38] [10/18/2002 (Fri) 13:30 - 16:30 / Hall C]

Chemiluminogenic imaging for highly sensitive detection of DNA

Kai Masaaki○[1], Hirayama Fumiko[1], Ohta Kazuko[1], Kabashima Tsutomu[1], Lee MyungKoo[2]

[1]School of Pharmaceutical Sciences, Nagasaki University, Bunkyo-Machi 1-14, Nagasaki 852-8521, Japan;[2]College of Pharmacy, Chungbuk National University, Cheongju 361-763, Republic of Korea

We have been studing sensitive non-enzymatic chemiluminescence (CL) imaging methods for the detection of DNA. For one of our methods, a unique chemical derivatization reagent, 3',4',5'-trimethoxyphenylglyoxal (TMPG) was utilized. This reagent reacted specifically with guanine bases in nucleic acids to quickly produce a chemiluminescent derivative under mild reaction conditions. TMPG gave an increasing CL intensity depending on the content of guanine base in the analyte DNA molecule, and thus a linear relationship between the intensity and guanine content at the same molar concentration of DNAs or oligonucleotides was obtained. Then we tried immobilized-hybridization assay of a target DNA sequence, telomere (TTAGGG)n binding to its cDNA on a nylon membrane. Telomere gene protects chromosome from fusion and degradation, and it becomes shortened by cell division. Thus telomere length in chromosome has been interested in the correlation with aging and tumorigenesis. The maximum CL intensity was reached around 1.0 min in the presence of DMF after the TMPG reaction, and as low as 0.5 ng of DNA was detected and visualized on the membrane. Overall, this simple and sensitive CL imaging system is expected to be very useful in biomedical analysis.

[PD4-39] [10/18/2002 (Fri) 13:30 - 16:30 / Hall C]

Optimization of a fiber optic probe for non-invasive blood glucose monitoring

Kang Naroo○, Baek JuHyun, Woo YoungAh, Lee HyunChul, Kim HyoJin