Technology for Fluorescently Labeled Paramagnetic Bead Array

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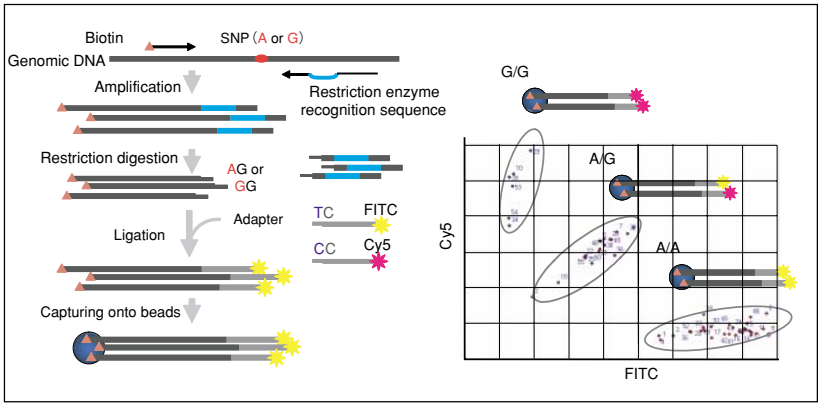
We have developed a highly reliable SNP typing protocol based on the sequence-specific ligation of fluorescently labeled DNA. The protocol was fully automated by a high throughput robot for handling paramagnetic beads which we have also developed in collaboration with a Japanese venture company. We are currently focusing on the enhancement of the throughput by introducing multiple-colored paramagnetic bead array technology which allows the multiplexed typing of tens of SNPs at the different locus in parallel. The technology will enable us to produce a small, easy-to-use instrument for biotechnology fields including medical inspections.



SNP typing by paramagnetic beads and fluorescence detection

High Performance of Submicron Beads to Purify Damaged-DNA Binding Proteins

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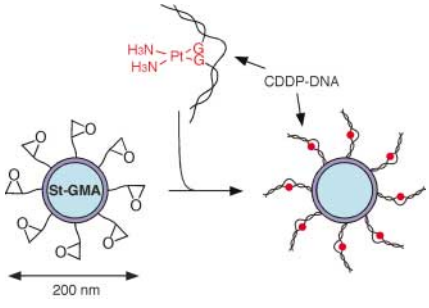
A high-performance affinity purification technique has been developed for cisplatin (CDDP)-damaged DNA binding proteins directly from crude protein extracts of HeLaS3 cell using novel submicron beads synthesized by copolymerization of styrene (St) and glycidyl methacrylate (GMA). It is usually difficult to purify affinity proteins with lower binding constants than sequence-specific DNA binding proteins by ordinal affinity chromatography. The new beads dramatically decreased both non-specific protein adsorption on solid surface and elution volume and simplified handling techniques. At least nine proteins clearly showed their higher affinity including several proteins that were previously reported to be as CDDP-DNA binding proteins.



Preparation of CDDP-DNA bead