Locus-in v.2 and GeneView$^{PLUS}$:
Computer softwares for entry and analysis of the human genome data

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The ultimate goal of human genome project is the identification of the entire genes and elucidation of their function through sequencing. For this ambitious goal, creation and efficient use of various databases for genome mapping are necessary. Mapping data are being compiled into GDB (Genome Data Base) with international collaborative efforts. Search queries to GDB can be carried out via network using various protocols such as vt100 terminal, X-server/client, gopher, mosaic, and SQL. Flat files of sybase tables of GDB are available for ftp. Thus, the GDB has become an inevitable international resource for the archive of human genome analysis. It is however yet necessary for developing user friendly softwares.

We have developed new softwares, Locus-in v.2 and GeneView$^{PLUS}$, which are designed for entry of raw mapping data, integration of various genome maps, and efficient use of GDB data. Both systems operate on a workstation with X-window and have smooth graphical user interfaces.

Locus-in v.2 has the following unique functions: (1) to graphically display chromosome ideograms (800 band-level) and zoom-in to a specific region of interest; (2) to generate sub-windows regarding a specific region for entry and display of raw or published data, and ordered or not-ordered data; (3) to create new breakpoints for boundaries of sub-windows; (4) to conctact database by entering mapping objects into these sub-windows on graphic display; (5) to refer published mapping data from GDB through sub-windows; (6) to show detailed information of each map object by clicking it; and (7) to manage the ownership of data from multiple researchers of different laboratories. Fig. 1 shows a representative scene in which chromosome 3p24.2-p13 and its expanded sub-region 3p21.2-p14.1 are selected for entry of raw data and to refer published GDB data. A number of small windows containing locus name or clone name are seen.

GeneView$^{PLUS}$ has the following characteristics: (1) to quickly search GDB data with easy operation; (2) to accept both English and Japanese; (3) to show the result on graphical chromosome ideograms; (4) to zoom-in to an interested region; and (5) to show additional information by clicking each map object. Fig. 2 shows a representative map display window which is evoked in Japanese mode. Chromosome 7p22-q11.21 is expanded and the locations of many loci are indicated as bars. Additional loci data if any can be retrieved by scrolling.

Locus-in v.2 and GeneView$^{PLUS}$ will be demonstrated on workstation at the meeting site.