Introduction

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The human gene mapping Workshops, which started in 1973 following the development of new human genetic mapping techniques, including somatic cell hybridization, have been the unique source of coordinated and validated data on the human genetic map. Successive workshops have produced maps of increasing detail and complexity taking into account new techniques as they have been developed, especially at the molecular level. It became clear, following the 7th workshop in 1983, that a computerised approach to assembling, accessing and reporting on the data was essential. Computer support was provided for the 9th workshop in Paris and a fully computerised, interactive and multi-user database was developed for the first time at Yale (HGM9.5) and used for HGM10. It was realized, however, that for the next major stage in human gene mapping, HGMII, which was becoming a core activity of the overall human genome project, a more sophisticated system was needed that was based on internationally accepted relational database standards. This could then be widely accessed and further developed so as to include new types of data, such as physical mapping, and be linked to other databases such as Online Mendelian Inheritance in Man (OMIM™) and mouse mapping data.

The initial software and database structure for this, GDB, have now been developed by The Johns Hopkins University team (under Peter Pearson and supported by HHMI) working in close collaboration with the UK HGMII team to ensure entry of new validated data through the workshop activities. The interim meeting at Oxford, HGM10.5, aimed at testing the first version of GDB and the system for validating data entry was a remarkable success. Collaboration between the GDB developers, the HGMII workshop team and the chromosome committee chairs and co-chairs achieved, in a remarkably short period of time, a major step forward in the production of a new relational database and a widely accessible version of the human gene mapping data, containing a substantial amount of new data that will be widely available. This process is now continuing to HGMII with further development of online access and computer based entry of new data from abstracts produced for HGM11 so that, by the end of 1991 the genome database should be fully accessible internationally, be continuously updated online and contain a very considerable amount of new data. The Human Gene Mapping Workshops are a remarkable example of long-standing international collaboration. They have provided information that is at the core of the human genome project, arguably the most exciting and important scientific collaboration that has ever been proposed, certainly in the biomedical area. The development of molecular techniques for physical mapping and DNA sequencing is leading to a complete union of the aims of the human gene mapping workshops and the genome project, with the workshops at the core. HGMII, during which there will be extensive opportunity for discussing future plans for chromosome workshops, informatics and other technological developments, as well as social, ethical and legal issues will therefore surely be a watershed in the development of the human genome project.