Genetic Repositories Australia

Enabling Grants Round 3 – Special Facilities

1. Contact Details:

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2. Description of the Facility/Activity:

Genetic Repositories Australia has been supported by an NHMRC Enabling Facility Grant to establish a central national facility for establishing, distributing and maintaining the long-term secure storage of human genetic samples from a variety of sources. This includes the production and provision of immortalised lymphoblast cell lines and DNA samples. GRA is based at the Prince of Wales Medical Research Institute in Sydney.
The Chief Investigators on the NHMRC Enabling Grant are Prof Peter Schofield (Prince of Wales Medical Research Institute & University of New South Wales), Dr Juleen Cavanaugh (Australian National University, Medical School, Canberra Hospital), Dr Susan Forrest (Australian Genome Research Facility) and Prof John Hopper (Centre for Genetic Epidemiology, University of Melbourne).

Aims and objectives
Genetic Repositories Australia (GRA) aims to provide a central national facility for establishing, distributing and maintaining the long-term secure storage of human genetic samples from a variety of sources. This includes the production and provision of immortalised lymphoblast cell lines and DNA samples. No equivalent facility exists in Australia to provide these services yet they form an essential part of all genetic and epidemiological studies that aim to delivery new knowledge and improved health care outcomes. The GRA facility will fill an essential 'missing link' in the translation of population and pedigree based studies into genetic and genomic investigations. The establishment of GRA will stimulate and facilitate world-class collaborative health and medical research in Australia and internationally through the production and provision of genetic resources along with relevant clinical or epidemiological information. GRA will partner with the Coriell Institute in the US, the leading provider of genetic material (cell

lines and DNA) to NIH supported programs. GRA will provide a key resource for studies that are emerging from the biotechnology revolution, including the growing fields of pharmacogenomics and personalised medicine. The Repositories will grow to be an integral part of research in molecular and clinical genetics at both diagnostic and therapeutic levels. By locating near a major international airport, GRA also aims to tap into the burgeoning South-East Asian biotechnology arena, where no equivalent facility exists. Future development of GRA will be facilitated by its scaleable design and as demand grows for its services. The absence of an Australian genetic (Cell and DNA) repository is a major limitation to large-scale collaborative studies, and restricts the ability of Australian teams at both national and international levels.

Nature and scope of activities and services provided

GRA will provide Australian medical researchers with a central facility for the processing and secure storage of DNA and cell lines (B-lymphoblastoid cultures established from peripheral blood) collected from patients, controls and epidemiological participants from studies on a range of diseases and their outcomes. Samples will be shipped to the facility from the point of collection, whether at the investigator's site or remote from it. DNA and immortalized cell lines will be generated by GRA and either stored for distribution to qualified investigators or, in the case of fee-for-service work, be delivered to the investigator. GRA will provide primary secure storage for these reagents. We will offer a two tiered costing structure - one rate for academic users and a higher rate for non-academic, off shore or commercial users such as biotechnology and pharmaceutical companies. Since there is a tendency for researchers to hold on to samples in an attempt to gain a research advantage over their competitors, the costing structure will reward academic researchers who make their collections available to other researchers by charging a substantially reduced fee to these contributors. This structure will provide incentives for fostering collaboration and advancing biomedical research in Australia. We will also offer (at an intermediate price), the possibility of an embargo on release of material to permit researchers time to complete research studies arising from their cohort recruitment before the samples become generally available to the research community. Researchers who wish to use the facilities without making samples available either immediately or in the long term will pay the full academic rate.

The Repositories will provide a source of clinically validated but de-identified patient material, with complete phenotypic descriptors of disease and family or cohort structure that will permit genetic analyses for disease gene identification. In addition, GRA will provide a facility, for researchers who are not themselves able to pursue DNA based research, to deposit materials for collaborative research. The creation of a genetic biomaterials resource, in association with a broader epidemiological and project-oriented background, allows the research community at large to gain access to biomaterials of the highest intrinsic standards, i.e. cell lines and DNA whose purity and freedom from contamination has been reliably tested, and whose availability is verifiably linked to the critical phenotypic and medical history data that make the biomaterials a true central resource ready to be mined for valuable new research and health insights. Through its partnership with Coriell, GRA will also provide international cell repositories with Australian samples, for example to meet NIH requirements. GRA will thereby support and enhance Australian researchers participation in such international studies.

Access arrangements

The facility will be under the direction of a dedicated manager and policies and processes will be in accord with NHMRC Enabling Facility requirements. There will be subsidised user charges associated with GRA. In early 2006, while the facility is being established, it is not possible to process samples, but enquiries for future use, or inclusion of the facility as part of NHMRC and other grant applications are welcome.