

GRIFFITH UNIVERSITY



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Mr Ian Dundas
Committee Secretary
House of Representatives Standing Committee on
Primary Industries and Regional Services
Parliament House
CANBERRA ACT 2600

Dear Mr Dundas

Inquiry into the Regional Development of Bioprospecting Industries

Thank you for the opportunity to provide comments to the committee's inquiry.

Bioprospecting plays a small role in the drug discovery process. Economic benefit to Australia will occur if as many aspects of the drug discovery and subsequent development process as possible are carried out in Australia.

Prior to bioprospecting, there is a need for target identification and validation in order to determine the potential for therapeutic intervention. The targets need to be developed into high throughput screens. The bioprospecting process is then used to supply samples for extraction and screening to identify natural compounds that have potential therapeutic use. Subsequently, there is a need to have in place strong structural chemistry in order to understand the process of ligand interaction, as well as skills in pharmacokinetics, bioavailability, metabolism, formulation and process chemistry.

Conversion of an active compound to a candidate drug may well take three to four years and the subsequent clinical trials will mean an overall project timeline of ten to twelve years, requiring industry investment of around A\$1,000 million.

Bearing in mind the fact that only 0.1% of genetic resources examined may have potentially useful constituents, there is significant investment required and significant risks are taken by industry to develop a compound occurring within nature.

I believe that Government should help to ensure that bioprospecting activities continue to be conducted in this country as this will, in the longer term, lead to more industry involvement. The critical mass achieved in bioprospecting contributes to establishing critical mass in biotechnology ventures for Australia. Such investments provide jobs of high quality with significant multiplier flow-ons.

Collecting activities should be restricted to professional agencies, such as herbaria and museums, that can house the collection voucher specimens and undertake taxonomy. External funding associated with collection activities provides an important revenue line for such activities.

The AstraZeneca – Griffith University collaboration examines samples of Queensland plants and marine organisms collected under agreement by the Queensland Herbarium and Queensland Museum. These agreements have assisted both bodies to expedite cataloguing processes and discovery of new species and populations. As a direct consequence of this project, the Queensland Herbarium has discovered 60 new plant species. Similarly, the Queensland Museum has achieved collection and distribution of over 3,800 species of sponges, soft corals and ascidians, about 2,000 of which are new to science. This accumulation of valuable new information, including satellite positions of all species, adds to the knowledge of biodiversity in this country.

I feel there is an opportunity to develop complementarity around bioprospecting in order to extend the expertise and skills in Australia and to provide some capacity for Australia to develop the commercial products.

Regional development would appear to be best placed to participate in the production side of new therapeutics. Plantation, forestry or other production can often be cheaper than synthetic alternatives and can deliver a commercial product faster. Discoveries arising from Australian native species would provide regional Australia with a competitive edge in supply and we would strongly encourage the establishment of this production in Australia for compounds discovered in our biodiscovery program.

Please do not hesitate to contact me should you require further comment on any of these points.

Yours sincerely

Ronald J Quinn
Director