



**AusBiotech response
to the discussion paper on the
National Research Investment Plan (NRIP)**

**Industry perspective for the consideration
of the Australian Research Committee (ARCom)**

3 August 2012

AusBiotech Ltd

ABN 87 006 509 726
Level 1, 322 Glenferrie Rd
Malvern Vic 3144 Australia
Telephone: +61 3 9828 1400
Website: www.ausbiotech.org

About AusBiotech

AusBiotech is Australia's industry organisation, working on behalf of members for more than 25 years to provide representation and services to promote the global growth of Australian biotechnology. AusBiotech is a well-connected network of over 3,000 members in the life sciences, including therapeutics, medical technology (devices and diagnostics), food technology and agricultural, environmental and industrial biotechnology sectors.

AusBiotech is dedicated to the development, growth and prosperity of the Australian biotechnology industry, by providing initiatives to drive sustainability and growth, outreach and access to markets, and representation and support for its members.

Translation of research

AusBiotech strongly supports the view put in the ARCom NRIP discussion paper that "the [research] system must have the capacity to translate research outcomes into public and private benefit and to respond to demand from a wide range of end-users."

When it comes to fundamental discovery in science and biomedical research, Australia is a legitimate and impressive global contributor, producing 3% of the world's research publications with only 0.3% of the population. However, our ability to translate this strength into tests, cures, treatments and vaccines to benefit the Australian community continues to fall short of expectation.

The 2012 (INSEAD) Global Innovation Index ranks Australia 13th in terms of innovation input and 31st in innovation output. But when these figures are converted to innovation efficiency ratio of output over input, Australia dives to a ranking of 107 out of 141 countries assessed.

In a recent submission to the (McKeon) Strategic Review of Health & Medical Research on how to increase the levels of commercially sponsored translation of research, the Association of Australian Medical Research Institutes (AAMRI) used triadic patents to measure commercialisation success, as these patents are registered for the same invention in the US, Europe and Japan. AAMRI found Australia ranks 20th in the OECD in terms of triadic patents per capita, which accounts for less than 0.8% of the world's triadic patents.

AAMRI said: "Australia's commercial translation of Government-funded research is poor by international standards...This represents tens of thousands of inventions not capitalised on each year, and means as a nation we are losing out on returns on our investment in research in terms of attracting private and foreign investment for product development, profits from the sale of products, taxation revenue, and patient benefits."

In a recent speech titled, 'Can we afford to fund translational research', Australia's Chief Scientist, Professor Ian Chubb AC asked rhetorically if Australia can afford **not** to fund translational research. "We need to take the research from bench to bedside and transform basic-science breakthroughs into clinical applications on an appropriate scale," he said. The biotechnology industry supports this sentiment.

The Federal Government spends more than \$9 billion annually on research, with about 98.5% provided to the research end of the spectrum, leaving only about 1.5 per cent of that spent on commercialisation: translating the research into products. Approximately 50% of this is directed to the automotive industry, which leaves little for other areas of Australian ingenuity.

It is AusBiotech's view that 1.5 per cent is too low to be considered an appropriate proportion and a larger portion of the country's research investment should be dedicated to translation. Despite the Government's support of the research end of the R&D spectrum, the development end is continually

left wanting – when support is needed for the entire value chain, from basic research through commercialisation, if Australia is to optimise social and economic returns on discovery.

The following comments respond specifically to the questions posed in NRIP discussion paper.

Response to Q1: Views on the representation of the national research fabric

The “national research fabric” shown in Figure 2, depicts a system or ‘fabric’ of interlinked and interdependent strands of “enabling capability areas” (domains) as wefts and “fundamental research elements” as warps. Based on the views expressed above about the importance of translation, AusBiotech believes ARCom should consider the ‘weaving’ or integration of translation considerations into each strand of the system, rather than viewing translation as an end product or peripheral outcome, as it is depicted.

Response to Q2: Scope of domains

AusBiotech notes that biotechnology has been categorised in the ‘technology domain’. While it does fit neatly into this domain, it could equally be categorised in the ‘biology domain’. It also has a strong presence and relevance to the ‘earth’, ‘human’ and ‘information’ domains. It would therefore depend on the use of the domains as to where biotechnology might be considered to belong.

Response to Q3: Gaps in capability

In support of integrating translation into Australia’s research fabric, AusBiotech would like to recommend the following be considered:

Human Capital/workforce

Current academic career structures prevent and actively discourage people from working for a time in industry or gaining a commercial orientation. In addition, poor career value is allocated to the translation components of the R&D spectrum, particularly in relation to patents and associated activities. The existing reward system mitigates against flexibility and industry engagement. For example, academics are recognised and rewarded for publications, but patents and broader industry experience are not valued as an equal, or celebrated, measure of success.

AusBiotech also notes that the biotechnology industry has recognised a substantial gap in the skill set of graduating bio-scientists/ bio-engineers and researchers – inadequate business or commercial orientation. If a greater emphasis was placed on the value of patents and the commercial process, this would motivate concurrent commercialisation learning during scientific study and amongst researchers.

Infrastructure and collaborative activities

On behalf of the Federal Government, AusBiotech was the managing agency for National Collaborative Research Infrastructure Strategy (NCRIS) Capability 5.5 Biotechnology Products, supporting the manufacture of recombinant proteins and biofuels in pre-commercial quantities. AusBiotech provided comment in response to the exposure draft of the 2011 Strategic Roadmap for Australian Research Infrastructure, which is reiterated here.

Through the program the Government’s \$23 million investment was significantly leveraged with the total value of infrastructure across the 11 partner organisations and 65 projects estimated to be \$56.27 million. Almost 50 scientific and technical support positions were created to provide valuable assistance for researchers to access the NCRIS facilities.

Having witnessed and experienced the value of the NCRIS program, AusBiotech is supportive of such good government policy continuing to provide further 'soft' infrastructure funding to complement 'bricks and mortar' infrastructure.

Creating national hubs of infrastructure has worked in linking industry with research infrastructure, delivering cooperation and significant and desirable outcomes for those seeking to utilise the newly available infrastructure. AusBiotech is supportive of a strong future program that will address needs in biotechnological areas, such as access to GMP manufacturing facilities and clinical capabilities.

Industry has valued the ARC Linkage grants and is looking to see how the program is to be modified. It appears that funding has been lost from the program and a statement from Government about the future of the program would be well received.

Response to Q5: Policy issues in business research investment

In AusBiotech's view, an important policy issue that could be addressed to strengthen the research's system linkages with industry is embedded in the details of the R&D Tax Incentive.

'Industry' should not be thought of big business alone, as Australia has generated hundreds of SMEs, usually from public institutes, which need to be treated differently with respect to access to infrastructure.

The recently introduced legislation increased the tax exempt ownership interests from 25% to 50% for eligibility to claim the R&D Tax Incentive. This was positive step forward given the typical commercialisation model of 'spinning out' from universities, however it failed to reach the critical majority of 51%. The legislation needs to be amended for spin-out companies with turnover less than \$20 million per year and the tax exempt ownership excluded from the group turnover threshold of public institutes.

Biotechnology start-up companies that are created to commercialise public sector intellectual property, need capital and cash flow in this phase of the entity's lifecycle. In the absence of a fully functioning venture capital market, the refundable 45% R&D Tax Incentive plays an important role in funding translation. The nature of the biotechnology business model is such that it is usual for start-ups to commence in high cash burn and tax loss. As they progress through the R&D and commercialisation cycle, there is often the need to undergo several funding rounds which lead to changes in ownership and may even have significant changes to its R&D portfolio. These changes in ownership can impact on the companies' ability to utilise any of the tax losses generated and carried forward as, after following these necessary funding and development activities, the company may not meet the Continuity of Ownership Test (COT) or the Same Business Test (SBT).

We propose the Government consider an amendment to both the tax exempt ownership threshold and ownership threshold for continuity of ownership to 51% or greater.

Conclusion

AusBiotech is supportive of ARCom's endeavors in the coordination of Australia's research investment and specifically the Committee's recognition of the importance of translation of the research outcomes. Thank you for the opportunity to comment on the NRIP.