Walter+ Eliza Hall Institute of Medical Research
DISCOVERIES FOR HUMANITY

National Drug Discovery Centre

General information

About

- ### What is the National Drug Discovery Centre?

  The **National Drug Discovery Centre (NDDC)** is an initiative of The Walter and Eliza Hall Institute of Medical Research to translate and advance scientific discoveries through the development of new medicines to treat disease. The NDDC offers Australian medical researchers access to a fully staffed facility with drug screening expertise and the latest in advanced robotic high-throughput technology and screening.

- ### Does the NDDC have a disease focus?

  No. We aim to assist academic researchers in Australia in the development of innovative therapies to treat all types of human diseases.

- ### Who funds the NDDC?

  In 2019, the Institute received $25 million from the Australian Government through the Medical Research Future Fund and $18 million from the Victorian Government. These investments support the expansion of the NDDC and its accessibility to the entire medical research community in Australia. Australian Government funding enables selected applicants from Australian research institutions to access the Centre at a 90 per cent subsidy. These funds build upon the Institute's own $32 million investment, as well as previous Victorian Government support and generous philanthropic donations.

- ### What are the benefits?

  We offer a fully staffed facility with drug screening expertise and the latest in advanced robotic high-throughput screening. Researchers from eligible Australian research institutions can apply for a subsidised screen, which would be provided at a 90 per cent subsidy.

Price

- ### What will the price be?

  A fixed number of subsidised screens is being offered to the Australian medical research community at a 90 per cent subsidy to actual costs. As an indicative guide, the full cost of a 300,000-compound screen is typically in the range of $1.00 to $1.50 per compound. Applicants whose project is chosen for a subsidy should expect charges between $30,000 and $45,000, after the 90 per cent discount is applied. Half of this fee is payable upfront, with the balance upon receipt of the final report.

Eligibility for a subsidised screen

- ## What are the eligibility criteria?

  Applications for subsidised screens are open to researchers from eligible Australian research institutions including, for example:

  - public universities
  - medical research institutes
  - hospitals
  - commercialisation units of the above institutions.

  While for-profit entities such as pharmaceutical and biotechnology companies are not eligible to apply for subsidised screens, they are encouraged to contact us regarding the possibility of collaborative or contract-based projects.

- ## How well developed does the screening assay need to be?

  The screening assay needs to be demonstrated in 96-well format and satisfy other criteria, such as minimum robustness, signal-to-background and component-stability requirements. It is essential that you or someone in your lab has hands-on experience in running the assay so you can help transfer it to us. Detailed assay readiness criteria are defined in the secure online application form and may also be downloaded from the **NDDC website** as a separate document.

- ## How many applications are selected each round?

  During its first year of operation, we will select six projects for a subsidised screen and will expand capacity annually, reaching full capacity over three years.

Applying for a subsidised screen

- ## How can I access the NDDC?

  Access to a subsidised screen follows a submission process designed to select the most promising research projects in Australia. You can apply through the application process outlined below.

- ## How do I apply for a subsidised screen?

  Applications can be lodged online using our **secure application portal**, which may be accessed from **our website**. Applicants should also **download** and complete the **Mutual Confidentiality Agreement** form before submitting confidential information (not applicable to Walter and Eliza Hall Institute staff).

- ## What are the selection criteria?

  Proposals are assessed according to their scientific quality and rationale, feasibility and innovation. Applicants will also need to have a working assay that is compatible with our platform.

- ## How is my application assessed?

  Our activities are overseen by a National Steering Committee - a panel made up of experts in biological sciences, translational biology and drug discovery, assembled from Australian and international research organisations. The Committee is responsible for selecting the most promising project applications, with the aim of translating Australian medical research discoveries into new treatments for human disease.

- ## If unsuccessful in the first round, can I resubmit in subsequent rounds?

  Unsuccessful applicants are encouraged to re-apply in subsequent rounds once any identified shortcomings have been addressed. We encourage you to discuss your application with us before resubmission.

- ## Can I make more than one submission?

  There are currently no restrictions on submitting more than one application.

Intellectual property

- ## Is my project idea protected?

  Yes. However, external (non-Walter and Eliza Hall Institute) applicants should **download** and complete the **Mutual Confidentiality Agreement** form before submitting any confidential information.

- ## Who owns the intellectual property if the screen is successful?

  You will have full ownership rights to new intellectual property generated from the screening results. If the screening campaign is successful in generating active 'hits', the applicant will receive a list of the most active structures via secure file transfer. Any new intellectual property arising from the hit list is owned by the applicant, subject to a Service Terms contract. Applicants are then free to pursue further development however they desire.

The screening process

- ## What happens during screening?

  Once your application has been accepted, we will liaise with you to initiate the assay transfer. We then reproduce the data generated in your laboratory and optimise, miniaturise and finally, automate your assays. At this point, the assay is tested via a pilot screen, running approximately 10,000 compounds in duplicate.

  If the pilot screen is successful (returning the expected hit rate and robustness), the full-scale screening campaign will commence. We will test up to 300,000 small molecules in your assay (single point). Hits from this screen will be triaged according to their effect, using thresholds determined by our screening experts. Hits interfering with the technology will be filtered out through a counter-screen assay. Finally, the potency of the hits will be determined with a 5- or 10-point dose-response assay.

- ## How will we work together on this project?

  We will liaise closely with you to ensure the smooth transfer of your assay to our facility. For this reason, it is essential that you or someone in your lab has hands-on experience in running the assay. Once in the Centre, your assay will be miniaturised and adapted to a format suitable for high-throughput screening. You will receive regular updates on progress of the screening campaign. After the screen is complete, you will receive data and a final report.

- ## What does the final report include?

  The final report will include:

  - a detailed standard operating procedure of both the primary and counter-screen assay
  - global statistics on the performance of the screening campaign
  - details of the activity thresholds and filtering strategy that were determined by our team and used to triage the hits selected for progression along the screening cascade
  - chemical structure, commercial information (including supplier and catalogue ID where possible) and the activity of the hits in the primary assay and in the counter-screen.

- ## How do I access the results?

  The final report and data will be transferred to you via a secure online portal.

Our capabilities

- What are your screening capabilities?

  Our screening facility is equipped with two high-throughput robotic platforms, providing capability for both biochemical and cell-based assays (up to PC2/BSL2 enclosure standard). The platforms are highly configurable and can support a wide variety of detection modalities including absorbance, fluorescence, fluorescence polarisation, FRET, time-resolved fluorescence, luminescence, high-throughput flow cytometry and high content imaging. The facility uses acoustic dispensing technology for accurate volume measurement. The Institute maintains a diverse screening collection containing more than 300,000 lead-like compounds. Smaller, boutique libraries may also be appropriate for some targets.

Enquiries

- I would like to discuss a project prior to submission of an application. Who should I contact?

  Please contact us to discuss your drug target and associated screening assay at **nddc@wehi.edu.au**.

Contact us

National Drug Discovery Centre

nddc@wehi.edu.au
nddc.wehi.edu.au

VICTORIA State Government

Australian Government Department of Health

Australian Government Department of Industry, Innovation and Science

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