CHILDREN'S CANCER INSTITUTE AUSTRALIA

Australian Cancer Research Foundation

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PERSONALISED MEDICINE SET TO REVOLUTIONISE CHILDREN'S CANCER TREATMENT

New Drug Discovery Robots Join War Against Kids Cancer

Children's Cancer Institute Australia for Medical Research (CCIA) today announced that for the first time, researchers are using a new million dollar drug-screening technology to develop new and improved treatments for childhood cancers much faster than ever before.

The $3.1 ACRF Drug Discovery Centre for Childhood Cancer houses customised robotic technology that enables one year's medical research to be completed in just days, to help prevent the deaths of the three children in Australia that die from cancer each week.

This robotic technology rapidly screens thousands of small molecule drugs to identify which ones have the potential to be developed into safer, more effective therapies that only target aggressive cancer cells and spare normal healthy tissue.

This drug screening technology is the only one of its kind in Australia devoted to childhood cancer research.

"The Drug Discovery robotics offer a huge advance in fast tracking critical research to find a cure for kid's cancer," Professor Murray Norris, Director of the Drug Discovery Centre said.

"It took CCIA five years to manually search through thousands of potential drug candidates to find one of CCIA's most promising drugs in development for childhood cancer. With this drug screening robot we could potentially discover effective drug candidates within days," Professor Norris said.

Current treatment protocols have a high risk of long term side effects for childhood cancer patients, including learning disorders and hearing impairment and potentially future cancers. Findings from the ACRF Drug Discovery Centre could lead to a new

era of personalised medicine – treatment tailored to the genetic make-up of the patient.

"Personalised medicine is the future for cancer therapy. The days of the one-size-fits-all approach to medicine will one day be over," Professor Norris said.

"Our work involves identifying genes that are abnormally switched on in a child's tumour and then finding a potential drug that can switch off, or change the behaviour of, that gene," he said.

"We have identified a gene that is switched on in children's cancers that respond badly, or are resistant, to chemotherapy. Once this gene is switched off, those children whose cancers have been resistant to traditional cancer therapies can now respond better to treatment.

"This new screening technology can save years of research and boost better outcomes for people with cancer," he said.

David Brettell, ACRF Chief Executive said, "Personalised drug treatments can ensure fewer long term side effects and better results, and that's the kind of outcome that motivates the people who so generously donate to the Australian Cancer Research Foundation."

CCIA also has a children's tumour bank which houses over twenty years of children's tumour samples that are snap frozen and stored in nitrogen. This children's tumour bank plays a critical role in drug discovery.

Professor Michelle Haber AM, Executive Director of CCIA said, "CCIA is committed to translating drug discoveries at the bench into real outcomes for children at the bedside, improving the quality of care as well as access to new technology.

Background

Children's cancer

As recently as the 1950s, childhood cancer was virtually a death sentence. Medical research has developed treatments to improve current childhood cancer survival rates to over 70%. Even so, more than 600 Australian children will be diagnosed with cancer this year, and this week alone, three will die of the disease. The incidence and burden of childhood cancer is significantly worse in the Asia-Pacific region, where survival rates from childhood cancer are less than 10%. Its long-term impact on

individuals, families and communities imposes a significant health, social and economic burden in Australia.

Children's Cancer Institute Australia (CCIA)
Children's Cancer Institute Australia for Medical Research (CCIA) is the only independent medical research institute in Australia devoted to research into the causes, better treatments, prevention and cure of childhood cancer. Our vision is to save the lives of all children with cancer and eliminate their suffering. Founded in 1976 by a dedicated group of parents and doctors who wanted to do something more in the fight against children's cancer, CCIA opened its first laboratory in 1984. The Institute, located at the Lowy Cancer Research Centre at UNSW, now employs over 160 staff and students, including more than 120 scientists. Research at CCIA comprises a multifaceted approach to improving the outcome of childhood cancer sufferers. Our research programs focus on translational research aimed at defining and achieving improved treatment and survival rates for children with cancer.
CCIA is affiliated with the University of New South Wales (UNSW) and Sydney Children's Hospital.
For donations, please visit our website at http://www.ccia.org.au.

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Images are available upon request. Photos/filming in the labs can be arranged.
ACRF Drug Discovery for Childhood
Cancer: http://www.youtube.com/watch?v=wJGYIqvI0I0

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