



Australian Government



THE PRIME MINISTER'S
PRIZES FOR SCIENCE

Celebrating 20 years

Associate Professor Peter Czabotar, Professor David Huang, Professor Guillaume Lessene and Professor Andrew Roberts

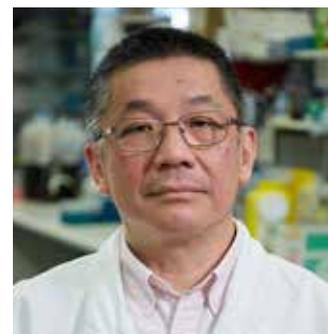
Walter and Eliza Hall Institute of Medical Research

2019 PRIME MINISTER'S PRIZE FOR INNOVATION

- The team from the Walter and Eliza Hall Institute of Medical Research is nominated for its role in the development of venetoclax, a breakthrough anti-cancer drug based on a landmark discovery made at the Institute in the 1980s.
- The drug binds to and inhibits the protein BCL-2, which inhibits cell death and contributes to cancer development.
- The drug was discovered and developed in a partnership with Genentech, a member of the Roche Group, and AbbVie.
- The four researchers collaborated brilliantly to achieve a world-first innovation. They worked as a team and brought their leadership and individual expertise to each step as required—biology, drug discovery, preclinical testing and clinical trials—to create this breakthrough cancer drug.
- Partnering with Genentech and AbbVie, the team discovered and developed the drug in a remarkably short time, taking less than seven years from its discovery to the first regulatory approval. Team members are:
 - Associate Professor Peter Czabotar, a structural biologist whose role included figuring out the crystal structures of BCL-2 family proteins with complex lead compounds (which directly informed the potency of high potency molecules)
 - Professor David Huang, a molecular cell biologist who was crucial in identifying properties of relevant cells and the preclinical efficacy of anti-cancer agent venetoclax and the related BH3-mimetic drug navitoclax
 - Professor Guillaume Lessene, a medicinal chemist who developed the Institute's high affinity BH3-mimetics
 - Professor Andrew Roberts, a clinician scientist who played a lead role in the clinical trials of navitoclax and venetoclax.



Associate Professor Peter Czabotar



Professor David Huang



Professor Guillaume Lessene



Professor Andrew Roberts



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- With its dramatic efficacy and generally minimal side-effects, venetoclax was approved by the United States Food and Drug Administration (FDA) in 2016, and by the Therapeutic Goods Administration (TGA) in Australia in 2017. Subsequently, venetoclax was listed on the Pharmaceutical Benefits Scheme (PBS) in 2019, and is replacing chemotherapy for many patients here and worldwide.
- The discovery of the drug and the innovative work behind its development has had multiple benefits for Australia, including:
 - World-leading access for 650 patients to venetoclax during clinical trials
 - Availability of treatment for thousands of patients with chronic lymphocytic leukaemia following TGA approval and PBS listing
 - More than \$20 million invested by pharmaceutical companies in Australian clinical trials
 - Multi-million dollar investment in laboratory research in Melbourne by global companies Genentech and AbbVie during drug development—employing and training more than 25 scientists and students
 - Significant milestone and ongoing royalty payments to the Walter and Eliza Hall Institute of Medical Research, to fund new drug discovery programs and fuel the translation of scientific discoveries from bench to bedside.
- Venetoclax has been granted five Breakthrough Therapy Designations from the FDA and more than 150 trials have commenced globally.
- Venetoclax sales at 2018 were US\$344 million. Forecasted sales are USD \$1.4 billion for 2019 and USD \$5.6 billion for 2025.



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Associate Professor Peter Czabotar

QUALIFICATIONS

- Bachelor of Science (Hons), Curtin University of Technology (1994)
- Doctor of Philosophy, Curtin University of Technology (1999)

CAREER HIGHLIGHTS

- The first to solve a crystal structure for a BCL-2 family member in complex with an organic ligand
- Committee Member for the Society of Crystallographers in Australia and New Zealand
- 2016 Received a \$1.2 million NHMRC Project Grant
- 2016 Jointly awarded the Eureka Prize for Innovation in Medical Research
- 2015 Awarded the Gottschalk Medal from the Australian Academy of Science

Professor David Huang

QUALIFICATIONS

- Bachelor of Medicine and Bachelor of Surgery (Hons), University of London (1985)
- Membership of the Royal Colleges of Physicians of the United Kingdom, Royal College of Physicians of London (1989)
- Doctor of Philosophy, University of London (1993)

CAREER HIGHLIGHTS

- The first to clone Bim, a major activator of programmed cell death
- Appointed Head of Strategic Alliances—Asia at the Walter and Eliza Hall Institute of Medical Research in 2015
- 2016 Jointly awarded the Eureka Prize for Innovation in Medical Research



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Professor Guillaume Lessene

QUALIFICATIONS

- Bachelor of Science (Hons), Université Paris 6 (1995)
- Chemistry Degree, Ecole Nationale Supérieure de Chimie de Paris (1995)
- Doctor of Philosophy, Université Bordeaux 1 (1999)

CAREER HIGHLIGHTS

- 2017 Lead medicinal chemist of the team involved in the co-development of the venetoclax compound, which was approved by the TGA for the treatment of high-risk chronic lymphocytic leukaemia
- 2016 Jointly awarded the Eureka Prize for Innovation in Medical Research
- 2014 Received the inaugural Sir John Dixon Hughes Medal for Medical Research Innovation
- 2009 Awarded the Royal Australian Chemical Institute's Biota Prize

Professor Andrew Roberts

QUALIFICATIONS

- Bachelor of Medicine and Bachelor of Surgery (Hons), University of Queensland (1984)
- Fellow of the Royal Australasian College of Physicians, Royal Australasian College of Physicians (1993)
- Fellow of the Royal College of Pathologists of Australasia, Royal College of Pathologists of Australasia (1993)
- Doctor of Philosophy, The University of Melbourne (1997)

CAREER HIGHLIGHTS

- 2018 Jointly awarded the Victoria Prize for Science and Innovation for Life Sciences
- 2016 Jointly awarded the Eureka Prize for Innovation in Medical Research
- 2016 First publication of venetoclax clinical trial results
- 2007–2018 Member of the Pharmaceutical Benefits Advisory Committee
- 2005–2007 President of the Haematology Society of Australia and New Zealand

NOTE:

Professor Andrew Roberts also works as a Clinical Haematologist at the Royal Melbourne Hospital and the Peter MacCallum Cancer Centre.

For their roles in the development of venetoclax, the team received the 2018 Clunies Ross Knowledge Commercialisation Award from the Australian Academy of Technology and Engineering (ATSE).