

Press release

Hong Kong, 14 May 2018

AXA Research Fund Fully Supports The World's First Shellfish DNA Vaccine Immunotherapy Research by Dr. Wai from The Chinese University of Hong Kong

Food allergy is one of the most common health problems that children face in Hong Kong. A local academic research¹ found that among 7,393 children who were aged 14 or below in Hong Kong, 352 reported or were diagnosed with food allergy. While among the leading causes of food allergic reaction, shellfish was the most prevalent (shellfish: 37.8%, egg: 14.5%, milk: 10.8%, peanuts: 8.5%). According to a study², the incidence rates in developed coastal cities in Asia like Hong Kong and Taiwan, were relatively higher than those in Europe and the Americas.

Swelling of lips and eyes, and skin rash are some of the common shellfish allergic reactions. In serious cases, life-threatening anaphylactic reactions such as a drop in blood pressure and difficulty in breathing might occur. However, unlike other common food allergens such as peanuts and eggs, there is no effective immunotherapy for shellfish allergy. Once serious allergic reactions occur, patients can only manage the condition by using epinephrine injectors and avoiding the allergen, but these methods are palliative. At the same time, conventional immunotherapy requires increase in the patient's dose of allergens gradually to be desensitised or acquire tolerance, as such taking sufficiently long duration for the treatment, and it is also possible to cause allergic side effects on the patients during the treatment.

Dr. Christine Wai and her team from the Faculty of Medicine of The Chinese University of Hong Kong have been studying the causes and responses of shellfish allergy since 2011. They attempted to construct hypoallergen-encoding DNA vaccines and inject them directly into the body to induce immunity, which helps reduce the allergic reactions to shellfish from the source by acquiring tolerance. The vaccines have already been proven successful on mice. With the support of AXA Research Fund, Dr. Wai is now working with the hospital to collect blood samples from shellfish allergic subjects to study the feasibility of applying the vaccine to humans.

Dr. Wai stated, "Shellfish allergy is a common and long-term life-threatening disease, but there is no corresponding clinical treatment at the moment. The hypoallergen DNA vaccine-based immunotherapy is in the hope of offering both therapeutic and preventive effects on all shellfish-allergic subjects, including children and adults. We hope that the vaccine can help shellfish-allergic subjects to relieve or even cure for all intolerances."

AXA Research Fund is the scientific philanthropy initiative of AXA Group, a global leading insurance company. The Fund is dedicated to support scientific researches related to the in-depth understanding and prevention of

¹ Source: Prevalence of self-reported food allergy in Hong Kong children and teens –a population survey (2012)

² Source: Parent-reported adverse food reactions in Hong Kong Chinese pre-schoolers: epidemiology, clinical spectrum and risk factors (2009)

various risks that pose threats to the environment, human health and society. Dr. Christine Wai from the Faculty of Medicine of The Chinese University of Hong Kong was the only researcher in Hong Kong granted by AXA Research Fund in 2017, receiving approximately HKD 1.24 million, to fund the research for the world's first shellfish sensitive DNA vaccine.

Ms. Andrea Wong, Chief Corporate Responsibility Officer of AXA Hong Kong, said, “We deeply appreciate the persistence and effort made by Dr. Wai and her team, and are very proud that local universities and researchers can initiate the world's first-of-its-kind research project, benefiting the human health globally. We believe that the research findings will help shellfish-allergic patient to alleviate or recover from the allergy. AXA Hong Kong is committed to protecting and caring for the local community. We will continue to play an active role in contributing our parts in the areas of health, youth education and social services.”

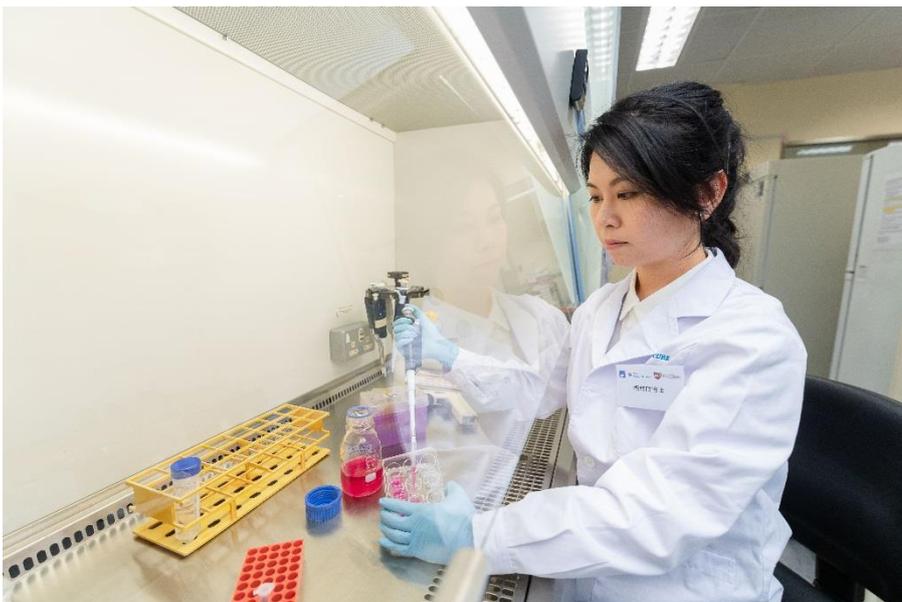
AXA Research Fund has provided approximately HKD 1.7 billion in funding 563 research projects conducted by researchers from 35 countries and 58 nationalities in the world since 2007. In Hong Kong, more than HKD 20 million have been committed to support 8 local researchers.

Photo caption

On behalf of AXA Research Fund, Ms. Andrea Wong, Chief Corporate Responsibility Officer of AXA Hong Kong (left), fully supports the world's first study on DNA Vaccine immunotherapy for Shellfish conducted by Dr. Christine Wai from the Faculty of Medicine of The Chinese University of Hong Kong.



Dr. Wai has contributed to the areas of molecular characterisation of shellfish allergens and generation of hypoallergenic derivatives.



BIOGRAPHY OF DR. CHRISTINE WAI

Dr. Christine Wai graduated from The Chinese University of Hong Kong with first class honours in Biology in 2010. She pursued postgraduate studies and research at The Chinese University of Hong Kong and was awarded her Ph.D. in Biology in 2015. She then received her postdoctoral training at The School of Life Sciences, followed by the Department of Paediatrics in the same university. Dr. Wai's research interest has been in the field of seafood allergy. The overarching goals of Dr. Wai's research are to design accurate diagnostic platforms, safe and effective therapies for the prevention and treatment of shellfish allergy and define the mechanisms of immunotherapy. Dr. Wai has contributed to the molecular characterisation of shellfish allergens, generation of hypoallergenic derivatives, construction of hypoallergen-encoding DNA vaccines, elucidation of a T cell epitope-based therapy and a DNA vaccine-based therapy for the prevention and treatment of shellfish allergy, as well as the transcriptomic profiling of shellfish allergy disorders in the past years. Apart from resulting in the publications of first author scientific papers, invited review papers and book chapters, the discovery of immunotherapy intervention on shellfish allergy has also earned her co-inventorship on two US non-provisional patent applications. Dr. Wai was awarded the postdoctoral fellowship from the Faculty of Science and Dr. Ch'ien Mu Postgraduate Scholarship from New Asia College of CUHK, and also best abstract awards in the European Academy of Allergy and Clinical Immunology Congress 2017, World Allergy Congress 2015 and Asia Pacific Congress of Allergy, Asthma and Clinical Immunology 2013. Dr. Wai was awarded the AXA Post-Doctoral Fellowships 2017 campaign to conduct a project on elucidating the efficacy and modulatory mechanism of next generation hypoallergen DNA vaccines.

ABOUT AXA RESEARCH FUND

The AXA Research Fund is the scientific philanthropy initiative of global insurance leader AXA dedicated to boosting scientific discoveries that contribute to societal progress. It also encourages researchers to engage with the general audience and feed the public debate. It was born in 2007 out of the strong belief that science plays a critical role in empowering people to face today's challenges and forge themselves a better life. So far, the AXA RF has supported 563 research projects, carried out by leading researchers of 58 nationalities and hosted in 35 countries.

ABOUT AXA HONG KONG

AXA Hong Kong, a member of the AXA Group, prides itself of serving over 1 million customers¹ in Hong Kong and Macau. Besides being one of the largest health protection providers in Hong Kong, it is also the #1 General Insurance provider² and the #1 insurance brand worldwide for the ninth consecutive year³.

AXA Hong Kong has a clear goal of 'empowering people to live a better life'. This is reflected in everything we do. AXA Hong Kong is one of the most diversified insurer providing full range coverage for individual and commercial customers. We offer all-round, integrated solutions across Life, Health and Property & Casualty to address all their insurance needs.

AXA Hong Kong leverages on Big Data and AI to transform end-to-end customer experience, making insurance simpler and more personal. As an innovative insurer, we continue to drive innovation notably in health and protection, supporting customers in prevention, treatment and recovery.

We also believe it is our inherent responsibility to support the communities we operate in. The AXA Foundation is our flagship corporate social responsibility programme covering all of our efforts in promoting health, education and community support to create positive and lasting impact to Hong Kong.

¹ Including customers of AXA China Region Insurance Company Limited, AXA China Region Insurance Company (Bermuda) Limited (incorporated in Bermuda with limited liability) and AXA General Insurance Hong Kong Limited

² Based on 2016 Insurance Authority market share statistics represented by overall gross premiums

³ Interbrand Best Global Brand 2017 (By brand value)

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