

Medix Prize of the Minerva Foundation 2019

## RESEARCH GROUP AT THE UNIVERSITY OF OULU AWARDED FOR THEIR WORK INTO THE MECHANISMS OF AGGRESSIVE PROSTATE CANCER

The Minerva Foundation's Medix prize in biomedical basic research has this year been awarded to a research group headed by Professor of Biochemistry and Molecular Medicine **Gong-Hong Wei** at the University of Oulu.

The awarded study, working through a collaboration with the group of genetic predisposition to cancer headed by Professor of Medical Genetics **Johanna Schleutker** at University of Turku, examines the progression mechanisms of aggressive prostate cancer and identified new genes affecting the spreading of the cancer. The study offers new insights into the risk stratification of aggressive prostate cancer and clinical treatment.

Every individual has small genetic variation in their genome. Earlier studies have identified the genomic variant that has been associated with the aggressive progression of prostate cancer. Interestingly, the awarded study also observed this association in a large group of 2,738 Finnish prostate cancer patients. If a man has this genomic variant, he is at a high risk of developing an aggressive form of prostate cancer.

"Earlier, a connection was found, but not a mechanism for how and why this particular variant affects prostate cancer. We have now been able to shed light on these mechanisms by using genetic, genomic, molecular and bioinformatic analysis on a large number of samples from prostate cancer patients", says Professor Gong-Hong Wei.

The results cannot yet be utilised in clinical medicine, but according to Professor Wei, this will be possible in the next couple of years.

"It is not necessary to treat everyone diagnosed with prostate cancer in the same way, because only few have the life-threatening form of the disease. In the future, scientific research can be used to reliably predict who has the aggressive form of the disease and who will benefit from less intensive therapy or observation."

"The novel genes and mechanisms discovered offer opportunities for completely new, personalised therapeutic strategies of prostate cancer", says Professor Wei.

According to Professor of Cell Biology **Aki Manninen**, prostate cancer is the second most common cancer in men. Over 1.1 million new cases are diagnosed worldwide every year. It is also the fifth leading cause of cancer-related deaths in men, resulting in some 300,000 deaths every year. In Finland, nearly 5,000 new cases are diagnosed every year.

"These figures indicate that targeting the best possible treatment to the patients who need it the most is very important for public health. Finding genetic reasons and mechanisms behind cancer is also important because prostate cancer has a higher hereditary element than many other cancer types", says Professor Manninen.

“Although an elderly patient diagnosed with prostate cancer today would not be able to benefit from the results of this research, they may well benefit his children or grandchildren, who may develop a genetically similar prostate cancer in the future”, Professor Manninen concludes.

The Minerva Foundation’s Medix prize is a major annual award for excellent Finnish scientific research published as one article during the previous year. The study of Professor Gong-Hong Wei’s group was published in *Cell*.

The authors of the awarded article Biology and clinical implications of the 19q13 aggressive prostate cancer susceptibility locus. *Cell*. 2018; 174:576-589: Gao P, Xia JH, Sipeky C, Dong XM, Zhang Q, Yang Y, Zhang P, Cruz SP, Zhang K, Zhu J, Lee HM, Suleman S, Giannareas N, Liu S, The PRACTICAL consortium, Tammela TLJ, Auvinen A, Wang X, Huang Q, Wang L, Manninen A, Vaarala MH, Wang L, Schleutker J, Wei GH.

The Minerva Foundation celebrates its 60th anniversary this year, and it therefore awarded two Medix prizes instead of the customary one. The other Medix prize was awarded for research into clinical medicine to the research group of Academy Professor **Anu Wartiovaara**. The group, working in cooperation with the group of paediatric cardiologists headed by Docent **Tiina Ojala** was recognised for their research into the genetic bases of severe childhood-onset cardiomyopathies. Both prizes are €20,000.

Invitation:

The research groups receive the Medix prizes and give a lecture on 23 September 2019 at 1.15 p.m.

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Further information:

The article in *Cell* [https://linkinghub.elsevier.com/retrieve/pii/S0092-8674\(18\)30728-1](https://linkinghub.elsevier.com/retrieve/pii/S0092-8674(18)30728-1)

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