

2019 Nobel Prize for Medicine Recipients recognized for Cancer Research through study of von Hippel-Lindau (VHL) disease

Prize awarded to 2019 Laureates today

BOSTON, MA, USA, December 10, 2019 /EINPresswire.com/ -- Stockholm, Sweden, 10 December 2019 – American doctor and cancer research scientist, Dr. William G. Kaelin, Jr. (Harvard University and Dana Farber Cancer Institute), along with 2 colleagues, Sir Peter Ratcliffe (University of Oxford, United Kingdom) and Dr. Gregg Semenza (Johns Hopkins University) have been selected as the 2019 Nobel Prize in Medicine recipients for their discoveries of how cells sense and adapt to oxygen availability. This work has been completed through the understanding of the von Hippel-Lindau (VHL) gene and is enabling a better understanding of abnormal cell or cancer growth.



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When you are studying about VHL disease you are not just studying about [the] disease you are also now touching other diseases as well where we can use the VHL gene to understand what is happening.”

William G. Kaelin Jr., MD

“The work of these three men, and particularly Dr. Kaelin, who has focused on the VHL gene in his research, is a cause for optimism, not only for the 200,000 people suffering from VHL around the world but for the 40% of the world’s population who will be diagnosed with cancer at some point in their lives. The VHL gene is the tumor suppressor gene and a key factor in controlling tumor growth,” said Ilene Sussman, Ph.D., Executive Director of the VHL Alliance, based in Boston, MA with affiliates around the world.

These three scientists have provided an understanding, through research focused on the VHL gene, of how cells can sense and adapt to changing oxygen levels and how

this results in cancer, such as the brain, bladder, breast, colon, ovarian, kidney, and pancreatic. When cells perceive a lack of oxygen (hypoxia), such as through a defect in the tumor suppressor gene (VHL), the transcription factor HIF (Hypoxia-Inducible Factor), is not allowed to bind to the VHL protein. The accumulation of HIF results in the overexpression of various cellular growth factors (VEGF, PGDF) and a change in the ways cells utilize glucose and generate energy. These changes ultimately lead to tumorigenesis. Understanding how to overcome HIF accumulation and the cell’s perception of hypoxia is key to preventing tumor development and growth.

The VHL Alliance has been working for decades with cadres of research professionals and members of the medical community around the world to better understand the genetic mutation associated with the VHL gene and its impact on cancer development. The VHL Alliance funds research in numerous areas related to von Hippel-Lindau and has long worked with Dr. Kaelin in numerous capacities. Thanks to research related to the VHL, the FDA has approved eight drugs for the treatment of kidney and breast cancers. These agents target the regulation of

cellular growth factors (the downstream consequence of elevated HIF levels). A HIF inhibitor is currently in clinical trials for von Hippel-Lindau and metastatic kidney cancer. Due in large part to Dr. Kaelin's research and that of other related cancer researchers, there is a reason to believe that this treatment will be effective in other forms of cancer.

The Nobel Prize award ceremony is being held in Stockholm, Sweden today, 10 December 2019 and has been preceded by Nobel Lectures in Medicine on 7 December 2019. For information about the 2019 Nobel Prize for Medicine and to learn about the research, please visit www.nobelprize.org/prizes/medicine.

For information about the VHL Alliance, please visit vhl.org.

About VHL

VHL or von Hippel-Lindau disease is a genetic form of cancer. VHL patients battle a series of tumors throughout their lives. The VHL gene controls the major feeding pipeline of every tumor. Curing VHL is one step closer to curing many other forms of cancer.

About the VHL Alliance

The VHL Alliance (VHLA) is the preeminent resource and clearinghouse for those affected by von Hippel-Lindau disease, including patients, caregivers, researchers, and the medical community. VHLA is a 501(c)(3) non-profit organization founded in 1993, which is dedicated to research, education, and support to improve awareness, diagnosis, treatment, and quality of life for those affected by VHL. VHLA is the leading funder of VHL research, funding over \$2.3 million in grants to support studies designed to find a cure. The VHL Alliance's vision is Curing Cancer through VHL.

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