

# WEHI Press Release

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## Dual functions of gene revealed, for better and for worse

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**Researchers at WEHI have pinpointed the function of a potent cancer gene.**

The gene, known as “ERG”, has long been associated with a range of human malignancies, including leukemia and sarcoma. American scientists showed in 2005 that ERG is mutated in more than half of all prostate cancers.

It was unclear, however, what function ERG normally performs in the human body and why it is so carcinogenic when mutated.

The team at WEHI has now demonstrated that ERG’s usual role is to regulate the activity of blood stem cells. Without ERG, these cells cannot divide normally and the body fails to generate the trillions of blood cells that required each day to carry oxygen and fight infection.

The study suggests that ERG causes cancer by convincing normal cells to behave like stem cells, triggering unrestrained growth and expansion.

The findings offer hope that the targets of ERG might now be open to identification, which in the future might lead to new drugs that shut down the proliferation of cancer cells.

The study was published in the prestigious international journal, Nature Immunology.

The research team was led by Benjamin Kile and included Stephen Loughran, Elizabeth Kruse, Douglas Hacking, Carolyn de Graaf, Craig Hyland, Tracy Wilson, Katya Henley, Sarah Ellis, Anne Voss, Donald Metcalf, Douglas Hilton and Warren Alexander.

The work was supported by the NHMRC, the Australian Stem Cell Centre, the Australian Phenomics Network, the Australian Research Council, the Australian Department of Education, Science and Training, the University of Melbourne, the Cancer Council Victoria and **MuriGen Therapeutics Pty Ltd.**

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