

A team of researchers from five Swedish universities have made a remarkable breakthrough in the treatment of cancer, with an equally innovative source of funding.

Led by Karolinska Institutet and the Science for Life Laboratory in Stockholm, the team has made inhibitors that kill cancer cells but not normal cells.

"We are first to show this new way of targeting cancer and this is likely going to be the major path for drug development in the future," said Thomas Helleday, holder of the Söderberg Professorship at Karolinska Institutet, who heads the study.

Until now, most modern anti-cancer drugs have been tailored to target the genetic makeup of the cancer – a so-called personalized treatment. Sometimes this can have a long-lasting effect, but more often than not the cancers mutate to become resistant. What the team has managed to do is to target an enzyme that is required for all cancer cells for survival, but that normal cells do not need.

Helleday explained that the treatment - which comes in the form of a pill - can kill any cancer and does not have any severe side effects.

"Some say our finding sounds too good to be true, and I understand their gut feeling after seeing so many promising cancer treatments fail," he said. "My research group has made paradigm shifts before and to those skeptics I say: just sit back and enjoy the revolution!"

What's also revolutionary is the way the research is financed, through "open innovation" and "crowd sourcing".

"I started a public foundation that owns all intellectual property and the idea is that we manufacture large amounts of the drug and provide it for free to the worldwide academic community, so they can design their own clinical trials and run them", Helleday said.

Swedish team delivers cancer breakthrough

Written by Johan Nylander

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"Also, as there is a public foundation behind the drug, it will not be used to enrich a few individuals, but be used for further work on new medicines."

A lot of work remains to be done before it is time for clinical trials, which are still a year or two away, Helleday said.

Being based in Stockholm brings many advantages, including a number of highly trained drug developers looking for new challenges, he said.

"A major point is that Swedish Universities do not claim or take control on intellectual property, allowing us to donate it to a public foundation," Helleday said.

"Another advantage is the collaborative nature of Swedes. We collaborated with five different universities to progress the project, which would have been difficult elsewhere."

Their concept is presented in two articles in science journal Nature, with the aim of spreading the word to as many as possible in the research community.

"It has generated interest from academics across the world, to try the new concept on the cancer indication they have specialized in," Helleday said.

The team has also sent out the compound to hundreds of scientists across the globe in an effort to increase the speed of innovation and to reach the goal of curing cancer more quickly. By freely sending out compounds, they have increased competition.

"Hundreds of scientists are advancing more quickly than one and we increase the chances of overall success," Helleday said.

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