



K O N I N K L I J K E N E D E R L A N D S E
A K A D E M I E V A N W E T E N S C H A P P E N

The Dr A.H. Heineken Prize for Medicine awarded to Hans Clevers

Ladies and gentlemen,

Listening to Hans Clevers, you would be tempted to think he is just very lucky.

Fifteen years ago, he says he stumbled on a cause of colon cancer whilst he was actually looking for something completely different.

More recently, he says his group just happened to find colon stem cells, the cells from which all other cells that line our intestine grow and replace every four days or so.

There's a beautiful word for coincidences like this: 'serendipity'. But serendipity in science is often more than simply a coincidence. It's the element of cleverness and insight that allows only the very best scientists to interpret what they are seeing as being of real importance. You need to be able to make serendipity happen.

The extremely 'clever' can even do many things at once; they can even become President of a Royal Academy.

As a scientist, Hans Clevers forced his luck by making visionary long-term investments in ground-breaking fundamental research. He wanted to understand how signalling worked in cells of the intestine and discovered a new world of adult stem cells. He co-discovered a way to make them glow in the dark in such a way that all related cells were the same colour. That may sound like just a fun trick, but it has opened up new horizons in medical science.

Today, Hans Clevers' earlier investments in basic science are delivering a steady stream of amazing discoveries.

Together with a growing number of colleagues, he is finding ways to make stem cells form organ tissues in the laboratory, outside the body, simply in a dish.

In the future, we expect that we can use these miniature organs to test new medicines. For Hans Clevers the next dream is to transplant this miniature colon tissue into patients or even re-create whole pieces of intestine to replace ones that were lost in disease.

Hans Clevers' work has shown us that many other adult organs have previously unknown stem cells that are able to replace cells that disappeared. His work has also shown us how stem-cell-like genes can turn healthy cells into cancer cells.

All that basic knowledge presently resides in the most important and highest-profile research journals. One day, however, it may also appear in clinics worldwide. Countless patients may be lucky enough to benefit from the investments Hans Clevers made in fundamental research many years earlier.

So ladies and gentlemen, please join me in honouring Hans Clevers, winner of the 2012 Heineken Prize for Medicine.