THE NOBEL PRIZE

Nobel Prize Lessons, 2018

Student worksheet – The 2018 Medicine Prize

Hi! Below you will find information and some questions about the 2018 Nobel Prize in Physiology or Medicine.

Vocabulary list

Receptor protein – a protein that carries signals from the outside of a cell and affects a process inside the cell
Antibody – a protein that is produced by the body's immune defence system and whose task is to combat substances that are alien to the body
Clinical study – an investigation in healthy or sick humans, aimed at studying the effect of a medicine or method of treatment

The 2018 Medicine Prize

The 2018 Medicine Prize was awarded to James P. Allison and Tasuku Honjo "for their discovery of cancer therapy by inhibition of negative immune regulation".
Curing cancer is a major challenge. There are three established methods for treating cancer: surgery, radiotherapy (radiation) and anti-cancer drugs. Now Allison and Honjo have found a new method, "immune checkpoint therapy", which is based on making our own immune system combat cancer.

James P. Allison studied a previously known receptor protein in one of the immune defence system's most important types of cells (T cells) and discovered that it functions as a brake on the immune system. He developed an antibody that released this brake, thus fully activating the body's T cells and destroying the cancer cells. Tasuku Honjo, the year's second Laureate in Physiology or Medicine, discovered a previously unknown receptor protein that also turned out to have a braking effect on the immune system. Today antibodies are used to treat certain types of cancer, thereby creating new ways of treating forms of cancer that were previously regarded as fatal.

Discussion questions

1. Imagine that you are asked to explain the work of the 2018 Laureates to a friend.
   - Why did they receive the Nobel Prize for their work?
   - What did you think was the most interesting thing about the 2018 Nobel Prize in Physiology or Medicine?

2. Alfred Nobel wanted the work of the Nobel Laureates to "have conferred the greatest benefit to humankind".
   - What do you believe the Laureates' contributions can lead to?
   - Can their contributions help other people in any way?