

Restriction enzymes

Professor:

Restriction enzymes are a really fast method, but can unfortunately also go wrong very easily. If the used enzyme recognizes several places in the genetic material it cuts more often and can cut up the complete genome at the end and makes it useless.

Simon:

But then you can't live anymore, can you?

Professor:

Yes, Simon, you've realized that correctly. When that happens then the cell dies.

Then let`s try it.

Narrator:

The professor gathers small plastic containers in the refrigerator and freezers and takes out a cell plate. He mixes liquids together and applies them to the cells and explains the children that it is now time to wait.

Professor:

Oh look, you see something.

Amira:

But the cells look strange, very different than before. Somehow dead?

Professor:

Well, you're right. But I will check it out.

Narrator:

And again he walks through the lab, takes things from the refrigerator and mixes things together. Then he puts the whole thing on a transparent gel.

Amira:

What is that?

Professor:

This is a gel, so I can see if the genetic material is completely broken, or only in some places. You can imagine it like this, if you apply a black felt-tip pen to a kitchen towel and put water on it, then the black turns into many other colors. Something similar happens here too.

Narrator:

The professor puts different liquids on the gel and after a long wait, the children could slowly see lines on the gel.

Emma:

Is that the genetic material you can see there? But there are several lines?

Professor:

That really doesn't look so great. Unfortunately, this method failed. I am really sorry kids! But that is exactly how science works sometimes.

Narrator:

Unfortunately, this method failed, decide again which way you want to go. Go to genetic scissor or UV-radiation.