



Organs on chips speed up research

An advanced mass spectrometer does in an hour what would otherwise take two days.

Milou Santbergen, who got a PhD in Organic Chemistry on 17 November, discovered this when using an 'organ on a chip', a kind of model of the organ. 'For example, you can simulate the flow of food through an intestine,' says Santbergen.

Santbergen combined an intestine on a chip with an advanced mass spectrometer, a device that identifies compounds based on their mass. This lets her analyse online

'One aim is to replace animal testing in the future'

how certain nutrients, medicines or toxins move through the intestinal wall. 'The advantage is that

this is fully automated. You can start up the machine, then go off and have a cup of coffee. It's much less labour-intensive and there is no risk of human error. You can also collect data much more quickly, and because you're measuring in real time, you can detect unstable compounds that might otherwise already have broken down.'

One aim of such 'organs on chips' is to replace animal testing in the future. Santbergen: 'We have now tried out an intestinal model but the principle works equally well for a model of the skin or liver. So there are many possible applications.' TL