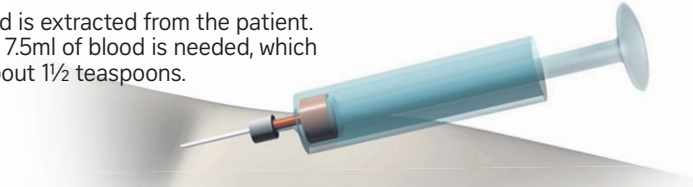
Growing tumours in tiny wells

Scientists from the National University of Singapore have developed a device which can grow cancer cells extracted from the blood of patients into tumour clusters, and which allows drugs to be tested on these tumours in different dosages and combinations. Eventually, the device could help doctors to come up with treatment customised for individual patients.

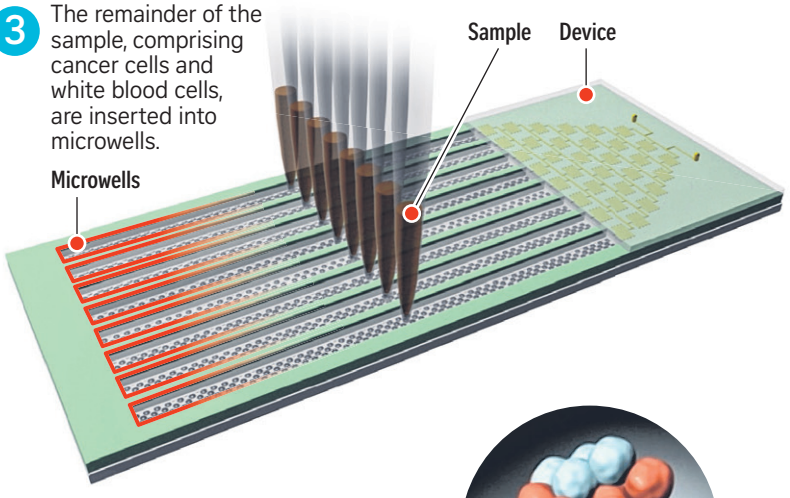
How it is done

1 Blood is extracted from the patient. Just 7.5ml of blood is needed, which is about 1½ teaspoons.

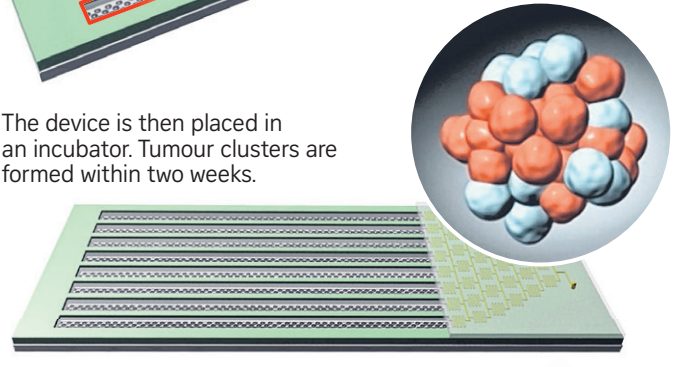


2 Circulating tumour cells – cancer cells that have broken away from a patient's primary tumour to form secondary tumours – are first separated from red blood cells, plasma and platelets.

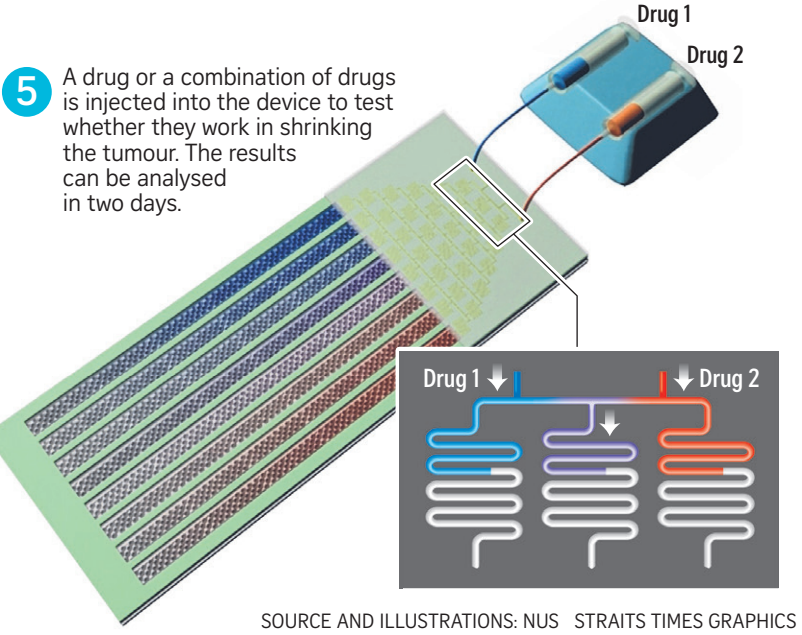
3 The remainder of the sample, comprising cancer cells and white blood cells, are inserted into microwells.



4 The device is then placed in an incubator. Tumour clusters are formed within two weeks.



5 A drug or a combination of drugs is injected into the device to test whether they work in shrinking the tumour. The results can be analysed in two days.



SOURCE AND ILLUSTRATIONS: NUS STRAITS TIMES GRAPHICS