



(From left, standing, clockwise) Dr Yong Chern Han, Mr Cedric Ng, Prof Teh Bin Tean and Prof Patrick Tan are the first to publish their study online in the journal *Nature Genetics*. PHOTO: **THE STRAITS TIMES**

Research team unearths genetic map of durian

✓ SAMANTHA BOH, THE STRAITS TIMES

Their day job was cancer research, but a group of scientists from different institutions here had another equally unifying passion.

Gathering together in Chinatown every week to get their fix during the season, the self-confessed durian connoisseurs began to ponder the complexities of the odour and mysterious allure of the king of fruit.

With their curiosity becoming a thorn in the flesh, they began, in their free time, to unravel the durian's DNA. Three years later, they have a complete genetic map of the fruit – a world first – and some answers to their questions.

“I was curious about the durian genome – what gene causes its pungent smell? How did its spiny husk arise?” said Professor Teh Bin Tean, deputy director (research) of the National Cancer Centre Singapore.

Their research was done on a particular durian variety of *Durio zibethinus* – the only durian species sold commercially – called Musang King (or Mao Shan Wang). Other durian types, such as the red prawn and the original D24, are all varieties of the same species.

The team found that a durian has some 46,000 genes, double that of humans.

And one type of gene in particular is responsible for its notorious smell – methionine gamma-lyase (MGL), which regulates odour compounds called volatile sulphur compounds (VSCs), which can smell like rotten eggs or onions.

Unlike other plants that typically have just one or two MGL copies, durians have four, which means their production of VSC is “turbocharged”, and that explains why they are so pungent, said study co-leader Patrick Tan, who is from Duke-NUS Medical School.

A paper on their study was published online in the prestigious journal *Nature Genetics* yesterday.

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