

# How size splits cells: Cells measure surface area to know when to divide

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One of the scientists who revealed how plants "do maths" can now reveal how cells take measurements of size. Size is important to cells as it determines when they divide.

In a paper published in *eLife*, Professor Martin Howard from the John Innes Centre and colleagues from the US, Germany and Singapore discovered that [cells](#) measure their [surface area](#) using a particular [protein](#), cdr2p. The finding challenges a previous model suggesting that another protein called pom1p senses a cell's length.

"Many [cell types](#) have been shown to reach a size threshold before they commit to cell division and this requires that they somehow monitor their own size," says Professor Martin Howard from the John Innes Centre.

"For the first time we can show how cells sense size and what aspect of size they measure, such as volume, length, mass or surface area."

The scientists found that as cells grow, the concentration of the cdr2p protein grows. The cells use cdr2p to probe the surface area over the whole cell. Their experimental findings contest a previously suggested model.

**More information:** [elifesciences.org/content/3/e02040](http://elifesciences.org/content/3/e02040)

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