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Scientists unravel proteins that mediates sense of touch

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Singapore: Solving a long standing mystery, the researchers at the Scripps Research Institute have identified a new mechano receptor protein that mediates the sense of touch in animals. The research team includes an Indian-origin scientist Mr Sanjeev Ranade.

The study demonstrated that mice that lacked the Piezo2 ion-channel protein in their skin cells and nerve endings, nearly lost all their sensitivity to ordinary light touch, but retained a mostly normal sensitivity to painful mechanical stimuli.

"We can say with certainty that Piezo2 is the principal touch sensor in mammals," said Mr Ardem Patapoutian, professor at The Scripps Research Institute (TSRI) at La Jolla in California. Mr Ranade, the post-doctoral fellow at TSRI said that a range of tests demonstrated a dramatic reduction in responsiveness to ordinary light stimuli.

He further explained that when the Piezo2 gene was inactivated in mice, the insensitive mice still remained responsive to skin-applied stimuli that are normally painful, such as heat, cold and pinching. The finding suggested that the detection of light, innocuous touch, which we commonly think of as the "sense of touch", is mediated principally by one set of nerve ends using piezo2 ion channels.

In contrast, stronger, pain-causing touch sensations appear to be mediated by a less force-sensitive set of nerve ends with their own ion channel proteins, which are yet to be discovered.