

Painful heat sensed by 'painless' in flies

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Japanese research group led by Prof Makoto Tominaga and Dr Takaaki Sokabe, National Institute for Physiological Sciences (NIPS), Japan, found that a small fly, drosophila, has a receptor for noxious heat. The research group reports their finding in *Journal of Neuroscience* published on Oct 1, 2008.

It has been unknown how flies detect a noxious heat to avoid it. The research group investigated the function of "Painless" protein, which had been known to be important for heat avoidance behavior in flies. This protein had been predicted as one type of ionic TRP (transient receptor potential) channels. They found that the channel can sense noxious heat directly. The channel activity was modulated by intracellular calcium to maintain optimal sensitivity. Camphor, a moth repellent, did block the activity of this channel.

Dr. Sokabe said, "this is the first report to show that flies can sense hazardous heat by a specific sensor, namely 'Painless'. This finding may help designing new anti-fly substance."

Source: National Institute for Physiological Sciences

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