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A study in the journal *Cell* reports that scientists have reached one of the most important milestones in the fight against cancer, discovering the mechanism of cancer metastasis. *Metastasis*—Greek, meaning next displacement—is the spread of a tumor from one place to other places. Successful treatment will be less effective and more difficult, if the tumor has begun to metastasize. Recently, a group led by Professor Chris Marshall at The Institute of Cancer has discovered the mechanism of the two key processes that allows cancer cells to change the way they spread in the body. The research team discovered that the competition between two proteins 'Rho' and 'Rac' allows tumors to spread throughout the body. These two proteins belong to a family that is responsible for signaling GTPase which regulates the synthesis of RNA during transcription. The research found that activation of Rac encourages tumor to adopt an elongated shape, and Rho encourages cell to adopt a round shape. Different shapes allow tumors to survive in different situations. For instance, round tumors are able to survive better in the bloodstream. Hopefully, this research will be useful in developing successful cancer treatments.