Scientists at Sloan Kettering Institute have discovered that the α6β4 integrin, one of several receptor proteins, plays a key role in signaling for the formation of new blood vessels for a tumor, a process called tumor angiogenesis. By blocking the signaling activity of the β4 subunit of this integrin on vascular cells, researchers found they could slow the growth of tumors.

In experiments, mice that were genetically altered to block the signaling portion of the β4 subunit developed smaller and less-vascularized tumors when injected with several kinds of cancer cells. This research is the first to demonstrate that α6β4 contributes to tumor angiogenesis by a signaling mechanism. It was published in the November 2004 issue of *Cancer Cell.*

“There is a lot of interest in tumor angiogenesis. If you could curb this process, it would be possible to suppress tumor growth,” according to Filippo Giancotti, a cell biologist at Memorial Sloan Kettering Cancer Center who led the study. But until now, few targets have been identified to slow the spread of tumors. Dr. Giancotti’s laboratory has recently demonstrated that α6β4 is also involved in the invasion and growth of cancer cells. He is now working to generate monoclonal antibodies that can effectively block the α6β4 integrin in mice genetically engineered to develop tumors. This integrin could also be a target for the development of small-molecule anticancer drugs in the future.