

【Engineering】

Title of Project	Study of Mechanisms of Cellular Mechanosensing
Principal Investigator Name	Masaaki SATO, Tohoku University, Graduate School of Biomedical Engineering, Professor
Abstract of Research Project Number of Researchers : 6 Term of Project: 2008–2012	The cells constituting tissues/organs can sense mechanical forces (termed as “mechanosensing”). Vascular endothelial cells, bone cells, and articular chondrocytes, which are the main focus of this study, are typical examples of cells with mechanosensors. These cells exhibit morphological and functional changes in response to external forces; however, the underlying sensing mechanisms are still unknown. The aim of this study is to elucidate the mechanisms by using a combination of cutting-edge bio-imaging and computer simulation techniques as well as novel experimental methods to specifically apply mechanical forces to local regions of the cells.