Development of senolytic therapy for pancreatic cancer cells

Primary Researcher: Toshiyuki Ishiwata, Director, Division of Aging and Carcinogenesis, Research Team for Geriatric Pathology, Tokyo Metropolitan Institute of Gerontology.

Co-researchers: Fujiya Gomi, Researcher, Division of Aging and Carcinogenesis, Research Team for Geriatric Pathology, Tokyo Metropolitan Institute of Gerontology.

Norihiko Sasaki, Researcher, Research Team for Geriatric Medicine (Vascular Medicine), Tokyo Metropolitan Institute of Gerontology.

Pancreatic cancer is usually a therapeutically refractory cancer that frequently occurs in elderly individuals and has a 5-year survival rate of approximately 10%. We previously reported that BLU9931, an FGFR4 inhibitor, suppresses growth and invasiveness and induces senescence in cancer cells. Quercetin administration induced senescent pancreatic cancer cell death. In this study, we investigated the antitumor effect of fisogatinib (BLU-554), an FGFR4 inhibitor on pancreatic cancer cells based on the effectiveness of this agent in clinical trials of patients with advanced liver cancer. BLU-554 inhibited the growth and invasiveness of pancreatic cancer cells and increased senescent pancreatic cancer cells. These results suggest that BLU-554 may inhibit cell proliferation and invasiveness and promote senescence of cancer cells and serve as a novel therapeutic option in patients with pancreatic cancer.