Study of the effects of nintedanib ethanesulfonate on bleomycin-induced murine pulmonary fibrosis model

Toshinori Moritani¹, Noriko Minobe¹, Ayahito Kimura¹, Hitomi Matsuda¹, Akihiro Ishimoto¹, Takeshi Iidaka¹

¹*Shiga Laboratory, NISSEI BILIS Co., Ltd.*

Idiopathic pulmonary fibrosis (IPF) is a refractory disease that progresses from alveolar damage and inflammation to interstitial fibrosis. In this study, we confirmed the progress of the pathological condition of pulmonary fibrosis model in mice and investigated the effects of IPF therapeutic agent nintedanib ethanesulfonate (ofev).

Bleomycin was intravenously administered to 9-10 weeks old male ICR mice for 5 days. To confirm the progress of the pathological condition, the mice were euthanized after 28, 42 and 56 days of initial administration of bleomycin, lungs were collected and weighed. The content of lung hydroxyproline (HP) and fibrosis area were measured, and histopathological examination were performed. Ofev was administered to mice by gavage at 3 and 10 mg/kg once a day for 42 consecutive days.

Increases in relative lung weight and lung HP content were noted in mice given bleomycin for 5 consecutive days intravenously. The formation of fibrotic lesions was confirmed and increases in the fibrosis regions were observed over time, histopathologically.

In addition, orally administration of ofev at 10 mg/kg/day to mice for 42 days, suppression of increase in lung relative weight and lung HP content was confirmed.