

Angiopoietin-like protein 2 is a potent hemangiogenic and lymphangiogenic factor in corneal inflammation

Tomohiko Usui¹, Tetsuya Toyono¹, Seiichi Yokoo¹, Mikiko Kimakura¹, Suguru Nakagawa¹, Satoru Yamagami¹, Keishi Miyata², Yuichi Oike² and Shiro Amano¹

¹University of Tokyo, Japan

²Kumamoto University, Japan

Purpose: To determine the plausible functional role of angiopoietin-like protein 2 (Angptl2) in inflammatory corneal hemangiogenesis and lymphangiogenesis in vivo.

Methods: Corneal hemangiogenesis and lymphangiogenesis were induced by suturing 10-0 nylon 1 mm away from the limbal vessel in Angptl2 knockout (C57BL/6) and K14-Angptl2 transgenic (Balb/c) mice. We analyzed Angptl2 and interleukin 1 β (IL-1 β) expressions in normal and vascularized corneas by real-time reverse transcription-polymerase chain reaction (RT-PCR) and immunohistochemistry. Corneal hemangiogenic and lymphangiogenic responses and macrophage infiltration were assessed by immunofluorescent microscopic studies using specific antibodies against CD31 (a panendothelial marker), LYVE-1 (a lymphatic marker), and F4/80 (a macrophage marker) and compared to their corresponding background.

Biography

Tomohiko Usui undertook his residency in ophthalmology at University of Tokyo Hospital after completing his medical degree at Tokyo Medical University. He completed fellowships in the Department of Ophthalmology at University of Tokyo School of Medicine, and the Massachusetts Eye and Ear Infirmary at Harvard Medical School, and received a Ph.D. from University of Tokyo Graduate School of Medicine on the subject of regulation of corneal endothelial functions. He has published more than 100 papers in reputed journals (impact factor: over 300) and currently his an Assistant Professor of ophthalmology at University of Tokyo, Japan.

tomohiko-tky@umin.ac.jp