S52-4 The role of Angiotensin receptors on perivascular nerve remodeling

◯Narumi HOBARA[1], Hayato HINO[2], Naoya HASHIKAWA[1], Hiromu KAWASAKI[2]
[1]Okayama Univ. of Sci., Dep. of Life Sci., [2]Okayama Univ., Grad. Sch. of Med. Dent. and Pharm. Sci.

The mesenteric artery has dense innervation of perivascular nerve such as sympathetic nerves and non-adrenergic non-cholinergic calcitonin gene-related peptide (CGRP) containing nerves (CGRPergic). We have demonstrated that the innervation of CGRPergic nerves in mesenteric arteries of spontaneously hypertensive rats (SHR) decrease with ageing, leading to CGRPergic remodeling. We also found that angiotensin II induces perivascular nerve remodeling via AT1 receptors (AT1R). Thus, those studies lead to the hypothesis that the restoration of CGRPergic nerve innervation after blockade of AT1R in SHR might be due to stimulation of AT2 receptors (AT2R). To clarify this hypothesis, we developed experimental perivascular nerve remodeling, which was induced by topical phenol treatment. From this study, we found that AT2R are responsible for reinnervation of phenol-induced injured perivascular nerves. Additionally, in primary cell culture of dorsal root ganglia and superior cervical ganglion, we found that outgrowth of CGRPergic and sympathetic nerves are facilitated by AT2R and AT1R, respectively. These results suggest that angiotensin receptors play an important role in reinnervation of perivascular nerves.