S22-4 Molucular mechanism of cerebral Abeta elimination across the brain barriers

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Cerebral amyloid β peptide (Aβ) levels are regulated not only by production system but also clearance system. The brain-to-blood elimination system of Aβ at the brain barrier is one of important systems for cerebral Aβ clearance, whereas its molecular mechanism remains unclear. Furthermore, the brain barrier is the barrier for the AD drugs which target the cells in the brain. In contrast, brain barrier itself faces to the circulating blood and the molecular(s) involved in the brain-to-blood elimination of Aβ are the potent candidates for the drug development. We have been analyzing the molecular mechanism of the brain-to-blood elimination of Aβ by administration of Aβ into the brain or cerebrospinal fluid *in vivo*. The previous studies reported that LDL receptor related protein 1 (LRP-1) was predominantly involved in the brain-to-blood elimination of Aβ at the blood-brain barrier. However, our studies have revealed that LRP-1 played minor roles in the elimination at the blood-brain barrier. On the other hand, the blood-cerebrospinal fluid barrier had the activity to eliminate Aβ from cerebrospinal fluid, and LRP-1 was revealed to be involved in this elimination. In this symposium, we would present our latest results about the molecular mechanism of the Aβ elimination across the brain barriers.