that the administration of gRb1 prevented apoptotic cell death signaling in SGCs and minimized injury resulting from cochlear ischemia.

Many substances and drug delivery systems specific to the inner ear are in development, with some under evaluation in animal experiments or clinical studies. Intravenous administration of gRb1 has been shown to rescue cortical neurons in ischemic injury [17]. Our findings suggest that gRb1 may be effective in the treatment of sensorineural hearing loss. Further research is required to reveal the protective effect of gRb1 against long-term damage to SGCs caused by cochlear ischemia.

We performed a histological examination of the cochleae to determine SGC degeneration caused by transient cochlear ischemia. Seven days after ischemia, the number of SGCs decreased in the basal turn. In addition, we investigated the neuroprotective effect of gRb1 against ischemic injury and our results demonstrated a significant protective effect against SGC degeneration via the suppression of the apoptotic cell death pathway. Therefore, gRb1 may be effective for the treatment of sensorineural hearing loss that eventually follows transient ischemia of the cochlea.

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