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Protective effect of *Rehmannia glutinosa* on the cisplatin-induced damage of HEI-OC1 auditory cells through scavenging free radicals

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The steamed root of *Rehmannia glutinosa* has been used in traditional Oriental Medicine for treatment of inner ear diseases, such as tinnitus and hearing loss. In the present study, we showed that the ethanol extract of steamed roots of *R. glutinosa* (SRG) protected HEI-OC1 auditory cells from cisplatin cytotoxicity in a dose-dependent fashion. In addition, to investigate the mechanism of SRG on cisplatin cytotoxicity toward HEI-OC1, we measured the effects of SRG on lipid peroxidation of cisplatin treated cells as well as scavenging activities against superoxide radical, hydroxyl radical, hydrogen peroxide, and DPPH radical. SRG (5 - 100 µg/ml) had protective effect against the cisplatin-induced HEI-OC1 cell damage and reduced lipid peroxidation in a dose-dependent manner. Furthermore, SRG showed strong scavenging activity against superoxide radical, hydroxyl radical, hydrogen peroxide, and DPPH radical. These results indicate that SRG protects cisplatin-induced HEI-OC1 cell damage through inhibition of lipid peroxidation and augmenting scavenging activities against free radicals. This work was supported by the Korea Science & Engineering Foundation (KOSEF) through the Vestibulocochlear Research Center (VCRC) at Wonkwang University (R13-2002-055-01003-0).