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Evidance that Two Mouse Deafness Mutation, *Cir* and *Sr*, are Allelic

Kyung In Cho*, Eun Ju Lee*, Myoung Ok Kim*, Sung Hyun Kim*, Jun Hong Park*, Jung Ok Choi* , and Zae Young Ryoo*

*Laboratory of Animal Science, Kangnam St. Marys Hospital, Catholic Medical College, Seoul, Korea

Positional cloning of hereditary deafness genes is a direct approach to identify molecules and mechanisms underlying auditory function. Nowadays many deafness genes are newly identified by finding the locus for the causative genes. Mutations at many different loci in humans and mice are known to cause hearing impairment. Mouse mutants exhibiting deafness may be useful in identifying some of genes involved. We had reported a spontaneous mutation in the inner ear of mouse, the circling mice, which exhibiting circling behavior, head tossing, and definably had hearing loss. The most notable pathologic phenotypes was near complete loss of the organ of Corti in the inner ear. The cir gene is autosomal recessive and shows complete penetrance. Generating 427 back-crossed progeny, a cir gene to be on the chromosome 9 (55 to 62 cM) by linkage analysis. As sr gene was already known to exist at 64cM of chromosome 9, and spinner mice shows very similar phenotypes with circling mice in addition to the reports before, we observed allelism between our circling mice and spinner mice. Our conclusion is that cir gene and sr gene is clearly allelic. That means both mutation came from same causative gene, but are not identical exactly with view of mutational point. So there might exist some differences among circling mice, spinner mice, and homozygots of the two.

Key words) ***cirling, spinner, deafness, allelic, mouse***