

All ears

by Monica Harrington

SCIENTIFIC NAME

Chinchilla lanigera

TAXONOMY

PHYLUM: Chordata

CLASS: Mammalia

ORDER: Rodentia

FAMILY: Chinchillidae

Physical description

The long-tailed chinchilla is a South American rodent slightly larger and more robust than a ground squirrel, with an average body length of about 12–14 in and average body weight of 400–600 g. Chinchillas have compact, stocky bodies with comparatively thin, delicate limbs. Their heads are relatively large, with prominent, rounded ears. They are native to the Andes Mountains, where they inhabit burrows or rock crevices at high altitudes. Chinchillas are crepuscular, or most active at dawn and dusk, and are agile jumpers, leaping up to 6 ft.

Chinchillas' long, thick fur, which ranges in color from gray to bluish gray or pearl, insulates them in the cold mountains. But it also has its drawbacks: because their fur is so soft, they have been hunted extensively in the wild. They avoid getting wet because the dense fur hinders drying and increases

susceptibility to fungus growth. They keep their fur clean by taking dust baths instead. Their full coats also cause them to overheat easily. If chinchillas are restrained or handled roughly, they may struggle or attempt to escape, which can result in 'fur slip,' a phenomenon in which a patch of hair is shed abruptly without damaging the underlying skin.

Research résumé

Chinchillas have served as animal models for investigating the pathology and treatment of both Chagas disease¹ and cholera².

But they are most commonly used in auditory research, in part because of the similarity between human

and chinchilla hearing anatomy and sensitivity³. The chinchilla has a sizeable middle ear with large auditory bullae and a conductive apparatus similar to that in humans. The chinchilla's hearing range is also similar to that of humans, and chinchillas suffer from presbycusis, or age-related hearing loss, like humans do⁴. Use of the chinchilla in auditory research is also facilitated by the accessibility of its middle and inner ear for experimental purposes³. Studies on noise-induced hearing loss⁵, otitis media^{6,7} and tympanic membrane perforation⁸ have all used chinchillas.

In a recent example, scientists found that conductive hearing loss secondary to fluid collection behind the tympanic membrane in otitis media results largely from impaired mobility of the tympanic membrane in chinchillas⁹. Other recent findings showed that pretreatment with D-methionine could protect chinchillas against noise-induced hearing loss¹⁰.



Kim Caesar/Nature Publishing Group

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