Bats add their voice to the FOXP2 story

September 19 2007

When it comes to the FOXP2 gene, humans have had most to shout about. Discoveries that mutations in this gene lead to speech defects and that the gene underwent changes around the time language evolved both implicate FOXP2 in the evolution of human language. More recently, patterns of gene expression in birds, humans and rodents have suggested a wider role in the production of vocalisations.

Yet numerous reports have established that FOXP2 shows very little genetic variation across even distantly related vertebrates - from reptiles to mammals – providing few extra clues as to the gene's role.

A new study, undertaken by a joint of team of British and Chinese scientists, has found that this gene shows unparalleled variation in echolocating bats. The results, appearing in a study published in the online, open-access journal PLoS ONE on September 19, report that FOXP2 sequence differences among bat lineages correspond well to contrasting forms of echolocation.

Like speech, bat echolocation involves producing complex vocal signals via sophisticated coordination of the mouth and face. The involvement of FOXP2 in the evolution of echolocation adds weighty support to the theory that FOXP2 functions in the sensory-motor coordination of vocalisations.

Citation: Li G, Wang J, Rossiter SJ, Jones G, Zhang S (2007) Accelerated FoxP2 Evolution in Echolocating Bats. PLoS ONE 2(9): e900. doi:10.1371/journal.pone.0000900

Source: Public Library of Science

Citation: Bats add their voice to the FOXP2 story (2007, September 19) retrieved 23 April 2024 from https://phys.org/news/2007-09-voice-foxp2-story.html

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