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## **Relationship between Function of Masticatory Muscle in Mouse and Properties of Muscle Fibers**

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**Abstract:** Mammals exhibit marked morphological differences in the muscles surrounding the jaw bone due to differences in eating habits. Furthermore, the myofiber properties of the muscles differ with function. Since the muscles in the oral region have various functions such as eating, swallowing, and speech, it is believed that the functional role of each muscle differs. Therefore, to clarify the functional role of each masticatory muscle, the myofiber properties of the adult mouse masticatory muscles were investigated at the transcriptional level. Expression of MyHC-2b with a fast contraction rate and strong force was frequently noted in the temporal and masseter muscles. This suggests that the temporal and masseter muscles are closely involved in rapid antero-posterior masticatory movement, which is characteristic in mice. Furthermore, expression of MyHC-1 with a low contraction rate and weak continuous force was frequently detected in the lateral pterygoid muscle. This suggests that, in contrast to other masticatory muscles, mouse lateral pterygoid muscle is not involved in fast masticatory movement, but is involved in functions requiring continuous force such as retention of jaw position. This study revealed that muscles with different roles function comprehensively during complicated masticatory movement.

Key words: <u>Myofiber properties</u>, <u>Eating habits</u>, <u>Masticatory muscles</u>, <u>MyHC</u>, <u>Masticatory movement</u>

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