

Etude des différentes myosines des muscles masticateurs du chat dans le contexte de la croissance.

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Study of the different myosins of the cat's chewing muscles in the context of growth.

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Within the framework of Dentofacial Orthopedics, we wanted to study the different forms of myosin in the masticatory muscles by an electrophoresis technique (myosin: main contractile protein) The cat was chosen as a laboratory animal because its masticating system presents movements of elevation and closing along a hinge axis like a pair of scissors. This masticatory model is apparently simpler than that of man where elevation, propulsion, retropulsion, left and right lateralization often coexist simultaneously, which makes the different repercussions on muscular levels difficult to interpret.

We already knew from ROWLERSON, who uses muscle fiber typing techniques by histochemical "ATPase", that this animal has type I (slow) muscle fibers, similar to those observed in the muscles of the limbs, and particular fibers called IIm, typical of the masticatory muscles and whose topography and percentage vary depending on the location of the sample. We dissected the muscles according to their different functional entities. Variants of myosin ("isomyosins") have been characterized by their electrophoretic mobility, measured in relation to guinea pig taenia-coli myosin acting as an internal marker. Two isomyosins JM1 and JM2 have been identified. JM1 shows a high electrophoretic mobility (Rf: 115 ± 1 ; rat soleus: 100) it is probably the very fast myosin "superfast", typical of IIm fibers. It is present alone in the temporal bone except the anterior region and in the deep masseter. JM2 offers slower mobility (Rf: 104 ± 1) comparable to isomyosin of the rapid rat muscle, D.E.L. (extensor digitorum longus) and different from that of the soleus, a slow muscle.

The distribution of these two isomyosins in the different muscle bundles seems to indicate that JM1 is specialized in the rapid and aggressive closing of the jaw while JM2 is specialized in maintaining the rest position. That of the 4 month old cat is similar to that of the adult cat, which indicates a great stability of this distribution during the growth.

— ROWLERSON, A., POPE, B., MURRAY, J., WHALEN, R.B., WEEDS, A.G.: A novel myosin present in cat jaw-closing muscles. *J Muscle Res Cell Mot* **2**: 415-438, 1981