

The dystrophin-glycoprotein complex and the vinculin-talin-integrin system in sternocleidomastoid muscle of baboon

Anastasi G.¹, Vermiglio G.¹, Runci M.¹, Magaudda E.¹, Trubiani O.², Fulle S.², Gatta V.², Pieragostino D.², Festa F.²

¹ Department of Biomedical Sciences and Morfo-functional Images, University of Messina

² Department of Orthodontics, University G. D'Annunzio, Chieti

The dystrophin glycoprotein complex and the vinculin-talin-integrin system are two costameric protein systems which play several and important roles in muscle tissue. In particular, sarcoglycans and integrins, by a bidirectional signaling, seem to cooperate in lateral transmission of contraction forces. These protein systems have been well described in human muscle tissue and also in primates, as chimpanzee. Our previous study performed on masseter muscle of baboon, have shown interesting results about the presence of negative fibers for sarcoglycans and integrins in low dominance baboons, a social group characterized by a major aggressiveness than high dominance. These results suggested as that in low dominance baboons alternative isoforms of sarcoglycans and integrins could be exist. In the present study we continued the investigation of the entire protein complexes, not only sarcoglycans and integrins, in another type of skeletal muscle of baboons, the sternocleidomastoid both in high and in low dominance. Results have shown that also in sternocleidomastoid of low dominance baboons fibers negative for the tested proteins exist. These results confirm our previous findings on masseter of baboon and support our hypothesis about the presence of alternative protein systems which could be correlated with the aggressiveness degree and which could be involved in evolution of the species.