

Myosin isoforms and parvalbumin content in the inferior oblique muscle of the rabbit

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Inferior Oblique (IO) muscle of the rabbit is characterized by a rapid time course of the isometric twitch and a high maximum shortening velocity of the sarcomeres but low maximum mechanical power (Asmussen *et al.*, *Pflügers Arch.* **426**, 542-7, 1994). The muscles of these experiments were frozen and analyzed for native myosin isoforms (PAA electrophoresis under non-denaturing conditions), myosin heavy chains (SDS-glycerol Page); myosin light chains, tropomyosins and parvalbumin (two-dimensional electrophoresis analyzed with a Biocom Image analyser). Isoforms and heavy chains were identified by their electrophoretic mobilities and (except for MHC_{com}) after blotting on nitrocellulose with antibodies (gift of J. Leger and F. Pons). The proportions of native myosin isoforms were as follows (mean $\pm$ SEM, $n = 36$): SM₂ (β -cardiac), $10.1 \pm 0.8\%$, α -cardiac, $3.8 \pm 0.7\%$; IM + neonatal, $17.4 \pm 1.4\%$; FM₃, $28.0 \pm 1.4\%$; FM₂, $20.6 \pm 1.4\%$; FM₁ $11.8 \pm 0.8\%$ and neonatal, $6.7 \pm 0.8\%$. Four myosin heavy chains were separated: MHC_{2A}/MHC_{2D} + MHC_{neonatal} $36.3 \pm 2.3\%$; MHC_{2B} + α -cardiac, $29.0 \pm 1.7\%$; MHC_{com} $23.8 \pm 2.1\%$ and MHC₁ $8.6 \pm 0.8\%$. Myosin light chains gave the following proportions: LC_{1f}, $36.6 \pm 1.1\%$; LC_{1s} $4.0 \pm 0.5\%$; LC_{2f}, $41.5 \pm 1.6\%$; LC_{2s} $7.3 \pm 1.3\%$ and LC_{3f}, $6.9 \pm 0.7\%$. The content of parvalbumin was $10.9 \pm 1.1\%$ of the total LCs. The high content of the fast myosin isoforms is in good accordance with the mechanical properties of the IO muscle.