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HISTOCHEMICAL AND ULTRASTRUCTURAL STUDY ON THE PRESENCE OF ELASTIC MICROFIBRILS IN THE MYOTENDINAL JUNCTION OF MOUSE GASTROCNEMIUS

A. M. SILVA-MATOS & G. COTTA-PEREIRA/*

UERJ/UFRJ, Departamentos de Histologia e Embriologia, Rio de Janeiro, RJ, Brasil *Instituto Oswaldo Cruz, Departamento de Patologia, Caixa Postal 926, 20001 Rio de Janeiro, RJ, Brasil

Fragments of myotendinal region of gastrocnemius muscle of adult white mice have been fixed in 3.5% paraformaldehyde or 10% formaldehyde, both in PBS, for light microscopic study, and 3% glutaraldehyde containing 0.25% tannic acid in Millonig buffer for electron microscopical study.

For light microscopy, paraffin sections, stained by selective techniques for elastic system fibers (oxytalan, elaunin and elastic fibers) included resorcin fuchsin with or without previous oxidation with oxone (G. Cotta-Pereira et al., 1976, *J. Invest. Dermatol., 66*: 143-148). Those paraformaldehyde fixed fragments have been processed by immunoperoxidase techniques in order to reveal elastic microfibrils by the use of monoclonal antibody (HB8) (J. M. Polak & S. Van Noorden (eds), 1983, ***Immunocitochemistry, Practical Applications in Pathology and Biology***, Wright-PSG Inc., London). For electron microscopy, Epon sections of osmium post-fixed fragments have been stained with uranyl acetate and lead citrate (G. Cotta-Pereira et al., 1976, *Stain Technol., 51*: 7-11).

Resorcin-fuchsin stained sections after oxidation revealed strong positivity on structures situated in the muscle cell extremities contacting the tendinous connective tissue. Similar reaction occurred with sections processed by immunoperoxidase techniques. The fibrous structures seem to continuing with similar material present along the endomysium wrapping individual muscle cells. Also, many fibers exhibiting similar tinctorial characteristics have been observed in the tendon.

In the electron microscope, bundles of tubular microfibrils 10 to 12 nm in diameter have been observed intermingled with collagen fibrils and oriented perpendicularly to the folded surface of muscle cells.

The ultrastructural aspect as well as the positivity to the staining methods above mentioned suggest that such bundles of microfibrils represent oxytalan fibers. These connective tissue fibers would participate with the collagen system fibers of the anchorage of the muscle cells to the tendon, by promoting the additional support in transmitting stretch forces from the muscle to the tendon.

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