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Effect of Additional TN-I on the Tension Development of Glycerinated Fiber in Skeletal Muscle*

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It was examined the effect of additional TN-I on the tension development of glycerinated fiber in skeletal muscle. After treatment with TN-I for 24 h at 0°C under a buffer A solution (120 mM KCl, 2 mM $MgCl_2$, 4 mM EGTA and 20 mM Tris-maleate pH 6.8), the treated fiber depressed the latent period, the rate of rise and maximum tension development in contaction at keeping the Ca^{2+}-dependent regulation. At this time, the peptides having 26 K and 28 K daltons were found on SDS-PAGE patterns from the buffer A solution after treatment of the fiber with TN-I. But, these peptides could not be found at the treatment of the fiber together with TN-I and -T. On the other hand, 26 K and 28 K peptides were also observed from the reaction mixture of myosin or heavy meromyosin with TN-I. These facts indicate that these peptides isolated from myosin head by a proteolytic action of TN-I, which was completely inactivated with TN-T.

From these results, it was suggested that TN-I treated fiber depressed the latent period, the rate of rise and the tension development in muscle contraction according to the damage of some myosin heads on the thick filaments in contractile unit.

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