

Morphological, immunological and biochemical characterization of purified transverse tubule membranes isolated from rabbit skeletal muscle

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A microsomal fraction consisting of membranes of transverse tubule origin has been purified by a modification of the calcium-loading procedure initially described by Roseblatt et al. (J Biol Chem 256:8140-8, 1981). Enzymatic analysis of this fraction shows an enrichment of the vesicles in the Mg⁺⁺ATPase (basal) activity characteristic of the T-tubules and an absent or very low Ca⁺⁺-dependant ATPase activity. Stereological analysis of freeze fracture replica of the membranes in the purified fraction indicates that they have a very low density of particles in their P faces and lack the structural manifestation of the caveolae typical of the sarcolemma. Immunological analysis performed with monoclonal antibodies prepared against purified T-tubule and sarcoplasmic reticulum membranes define some T-tubule specific antigens and confirm the morphological and biochemical data regarding the origin and purity of the Ttubule preparation. © 1989 Kluwer Academic Publishers.