MG34955 | MICRO ANATOMY HUMAN SMOOTH MUSCLE FIBER

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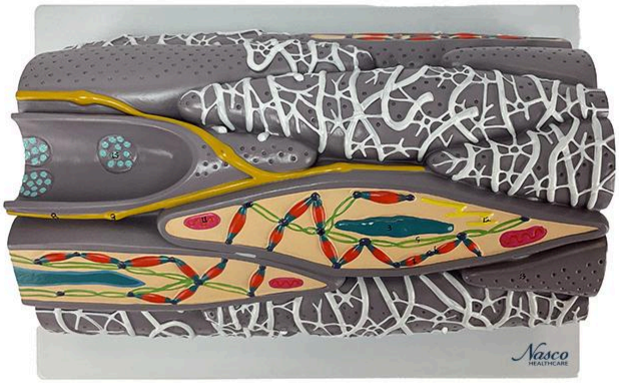

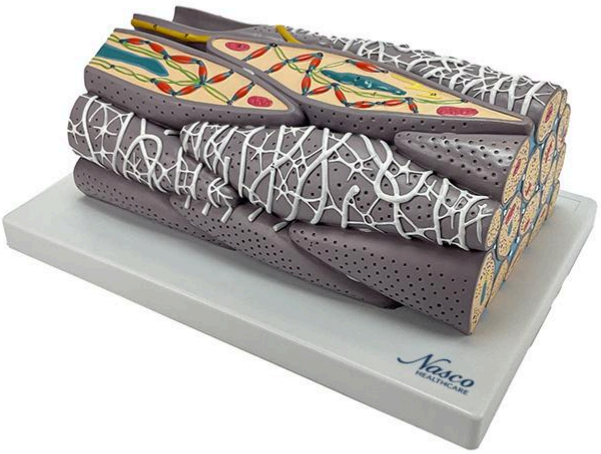

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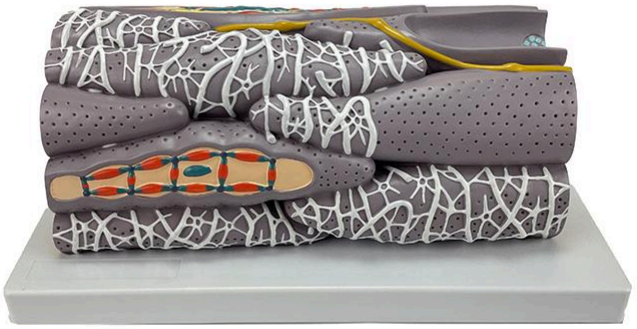

Smooth Muscle Fiber Micro Anatomy Anatomical Model, 10,000x magnification, exhibiting in detail the ultrastructure of a smooth muscle, mounted on a polymer base and with manual numbering and painting for easy identification of structures.

Applications:

Ideal for study and training in anatomy, physiology and physiopathology, in academic and professional environments. Indicated for teaching and understanding the ultrastructure of smooth muscle and its intercellular relationships, especially the gap junction.

Technical Advantages:

* Detailed representation of the smooth muscle ultrastructure;
* Manual numbering and painting;
* High-precision natural molding;
* Manufactured from stable synthetic material and resin with toxicological test approval;
* Includes an information card with related structures;
* Precise replicas;

* Model with references and markings.

3D Technology and Augmented Reality:

Our anatomical models offer a visual complement through information cards that activate 3D models viewable in augmented reality (AR). This interactive platform assists learning, allowing for comparative analysis of anatomical structures and offering resources for continuing education in anatomy, physiology and physiopathology.

Technical Specifications:

* Scale: 10,000x
* Material: Synthetic resin

Main Structures:

Gap Junction: Gap junctions (or communicating junctions) are intercellular connections that allow direct communication between smooth muscle cells. They are formed by protein connections that create channels allowing the flow of ions and small molecules between adjacent cells, coordinating muscle contraction.

Sarcoplasmic Reticulum: A network of membranous tubules and cisternae in the cytoplasm of smooth muscle cells. It is analogous to the sarcoplasmic reticulum of striated muscle cells, but less developed. Its main function is the storage and release of calcium ions (Ca^{2+}), essential for muscle contraction.

Intermediate Filament: Elements of the cytoskeleton that provide structural support and mechanical resistance to smooth muscle cells. They are composed of proteins such as desmin and help maintain cell shape and the integrity of cell junctions.

Actin Filament: Fibrous protein that forms thin filaments in the cytoplasm of smooth muscle cells. They interact with myosin filaments during the process of muscle contraction. Their arrangement is less organized than in striated muscle cells.

Myosin Filament: Motor protein that forms thick filaments in smooth muscle cells. It interacts with actin, using ATP to generate force and cause muscle contraction. The arrangement is different from striated muscle cells, contributing to slow and sustained contraction.

Nucleus: Cellular structure that contains the genetic material (DNA) of the smooth muscle

cell. It is usually single, elongated and located centrally in the cell.

Dense Body: Dense cytoplasmic structures that anchor actin filaments in smooth muscle cells. They are analogous to the Z discs of striated muscle cells and play a crucial role in cytoskeletal organization and force transmission during contraction.

Dense Plaque: Structures similar to dense bodies, also important for the anchoring of actin filaments. They contribute to cytoskeletal organization and the transmission of contractile force.

Mitochondria: Organelles responsible for the production of energy (ATP) in the smooth muscle cell. They are abundant due to the energy demand of muscle contraction.

Connection: Refers to the gap junctions that allow communication between smooth muscle cells.

Villi: Projections of the smooth muscle cell plasma membrane that increase the cell surface area. These structures are important to facilitate interaction with the extracellular environment, including nerves and blood vessels.

Other structures can be verified directly on the physical piece or on the interactive 3D model.

About the Anatomical Models:

They are developed with resin replication technology, supplying the need for anatomical pieces for teaching and research. They present the essential morphological characteristics with excellent cost-benefit, good resistance, manual painting and numbering for precise identification of structures.

List of all visible structures:

- gap junction
- sarcoplasmic reticulum
- intermediate filament
- actin filament
- myosin filament
- nucleus
- dense body
- dense spot
- mitochondrion
- connection
- villi

- nerve
- connective
- reticular fiber
- smooth muscle cell
- reticular fiber