

NeuroGel the product

CHARACTERISTICS OF THE NEUROGEL

Scanning electron micrograph of NeuroGel®;

NeuroGel® belongs to a class of hydrogels formed of polymers (i.e., long chains of identical molecules). These hydrogels have various characteristics that resemble soft organs. NeuroGel® is a viscoelastic gel which absorbs water up to its maximal swelling capacity, and like brain tissue this gel is deformable but not compressible. The essential features of NeuroGel® are its porous structure and the fact that it permits diffusion of molecules in a way that is reminiscent of properties of the embryonic brain. Thus, this hydrogel provides a support matrix which encourages the regeneration of cells, blood vessels and nerve fibres associated with regenerating spinal cord tissue.

PHYSICAL CHARACTERISTICS AND PERFORMANCE OF NEUROGEL®;

PHYSICAL CHARACTERISTICS

PERFORMANCE Biocompatibility

And hemostatic properties Integrates well with spinal cord tissue Microchannels and large macromolecular surface Favours cell organisation and tissue formation Bioadhesivity Integrates rapidly with the spinal cord Mechanical integrity Stable Hydrophilicity Allows transport of biological fluids and growth factors

SPECIFICITY OF NEUROGEL®; In comparison with the other main lines of research into spinal cord injury. NeuroGel® offers unique advantages due to its original conception and its high degree of therapeutic innovation. NeuroGel® is the only product that provides the possibility of surgically restoring lesions of the spinal cord. This product, which favours neural regeneration, is completely synthetic, easily manufactured, has an unlimited shelf-life (i.e., non-degradable), is non-toxic and can be sterilized.

In addition, NeuroGel® is not subjected to long and expensive serologic tests as is the case with cell grafts, which cannot be sterilized and where the risk of transmission of viral diseases is high (e.g., HIV, Creutzfeld-Jacob disease, hepatitis B, tuberculosis, cytomegalovirus and herpes). Preclinical trials with NeuroGel® have shown No indication of either acute or chronic rejection reactions.

Therefore, after the implantation of NeuroGel®, patients will not have to use the drug cyclosporine as is the case following organ transplants.

NEUROGEL® AND OTHER MAIN LINES OF RESEARCH FUNCTION ADVANTAGES DISAVANTAGES
 NeuroGel® Anatomical restoration and guidance of nerve fibers Easy to manufacture and store None Nerve cells grafts Cell replacement Cell replacement Limited developpement;
 Risk of transmission of viral diseases Genetic engineering Activation of growth factors Genetic and cell control Risk of tumor formation Neuroactif factors DNA Cell specificity Transient effect Pharmacology Activation of neural transmission cells Non-invasive Dose dependent effects Guidance channels Guidance Easy to manufacture Non-anatomical restoration; rigid implant