Nervous tissue

Is the main component of the two parts of the nervous system; the brain and spinal cord of the central nervous system (CNS), and the branching peripheral nerves of the peripheral nervous system (PNS), which regulates and controls bodily functions and activity.

It is composed of neurons, which receive and transmit impulses, and neuroglia, also known as glial cells or more commonly as just glia (from the Greek, meaning glue), which assist the propagation of the nerve impulse as well as providing nutrients to the neuron.

Nervous tissue is made up of different types of nerve cells, all of which having an axon, the long stem-like part of the cell that sends action potential signals to the next cell.

Functions of the nervous system are sensory input, integration, control of muscles and glands, homeostasis, and mental activity.

Electrospinning is the process by which a scaffold containing micrometer and nanometer diameter fibers are drawn from a polymer solution or melt using a large voltage gradient between a polymer emitting source and a grounded collector. Ramakrishna and colleagues first investigated electrospun fibers for neural applications in 2004. After this initial study, electrospun fibers are increasingly investigated for neural tissue engineering applications [1)].

1)
Schaub NJ, Johnson CD, Cooper B, Gilbert RJ. Electrospun Fibers for Spinal Cord Injury Research and Regeneration. J Neurotrauma. 2016 Aug 1;33(15):1405-15. doi: 10.1089/neu.2015.4165. Epub 2016 Mar 30. PubMed PMID: 26650778.