10.2B: Neuroglia of the Peripheral Nervous System

The two kinds of glia cells in the PNS, schwann cells and satellite cells; each have unique functions.

Learning Objectives

- Identify the neuroglia of the peripheral nervous system

Key Points

- There are two kinds of neuroglia in the peripheral nervous system (PNS): Schwann cells and satellite cells.
- Schwann cells provide myelination to peripheral neurons. Functionally, the schwann cells are similar to oligodendrocytes of the central nervous system (CNS).
- Satellite cells play an important role in modulating the PNS following injury and inflammation. These resemble the astrocytes of the CNS and assist in regulating the external chemical environment.

Key Terms

- **glia**: Non-neuronal cells that maintain homeostasis, form myelin, and provide support and protection for neurons in the brain and in other parts of the nervous system.
- **Schwann cells**: The principal glia of the PNS, these cells are involved in the conduction of nervous impulses along axons, nerve development and regeneration, trophic support for neurons, production of the nerve extracellular matrix, modulation of neuromuscular synaptic activity, and presentation of antigens to T-lymphocytes.
- **Satellite glial cells**: These cells line the exterior surface of neurons in the PNS and neuron cell bodies within ganglia.
The PNS has two kinds of neuroglia: schwann cells and satellite cells. Schwann cells provide myelination to peripheral neurons. They also perform phagocytic functions and clear cellular debris, allowing for the regrowth of PNS neurons. Functionally, the schwann cells are similar to oligodendrocytes of the CNS.

Satellite cells are small glia that surround neurons’ sensory ganglia in the ANS. These resemble the astrocytes of the CNS and assist in regulating the external chemical environment. PNS satellite glia are very sensitive to injury and may exacerbate pathological pain.

Schwann Cell: A Schwann cell in culture

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