

for a primary research article related to study of the cytoskeleton in a cell type of your choosing

- 1) The cell type you chose,
- 2) The name of the primary research publication you found interesting,
- 3) The research question being asked in the publication,
- 4) The cellular model that was used to try to answer the research question, and
- 5) How many review articles resulted from a search of this specific topic? Be sure to include citations.

Myelin sheath is an insulating layer that forms around nerves, allowing electrical signal quickly (saltatory conduction). In the central nervous system (CNS), the myelin is formed by the oligodendroglia cells and in the peripheral nervous system (PNS) by the Schwann cells. Oligodendrocytes originate from oligodendrocyte progenitor cells (OPCs) after distinct developmental stages. Then they extend to provide insulation to many axons.

Schwann cells typically myelinate only a single axon, they have additional functions, including clustering of ion channels at the nodes of Ranvier, promotion of neuronal survival, and regulation of axonal diameter.

The actin cytoskeleton in myelinating cells

In myelinating cells, the cytoskeleton acts as a scaffold to mediate cell-to-cell interactions and exhibits specific activity patterns. The question is to understand what regulates these cytoskeletal patterns during cell differentiation and myelination.

Various animal models and in-vitro experiments indicate that actin polymerizing proteins (WAVE1, WAVE2), and signal transduction molecular switches, Rho GTPases, regulate cell proliferation and myelination.

<https://pubmed.ncbi.nlm.nih.gov/34287056/>

<https://pubmed.ncbi.nlm.nih.gov/28390425/>

<https://pubmed.ncbi.nlm.nih.gov/30847860/>