

Lauren Estep

Biology, College of Biological
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Mentor: Paul Letourneau PhD,
Department of Neuroscience

Calcium and Laminin Increase the Migration Distances of Schwann Cells

Schwann cells are found in the peripheral nervous system and form the myelin sheaths that surround axons. The myelin sheaths increase the speed of impulse conduction by allowing the nerve to perform saltatory conduction. This study is focused on the migration of these cells, specifically the effects of calcium and laminin on movement. Calcium and laminin promote cellular binding and are hypothesized to increase the migration distances. Calcium accomplishes this by stabilizing N-cadherin, a protein which Schwann cells use for intercellular binding, while laminin is a protein in the basement membrane that is involved with cell adhesion. Schwann cells for this experiment were obtained from the dorsal root ganglia of chicken embryos and were grown in a collagen matrix overnight. They were taped with a videomicroscope and analyzed with MetaMorph. The study concluded that the Schwann cells grown in calcium and in laminin migrated a further distance than the control cells which were grown without calcium and laminin.



Poster Number: Session: