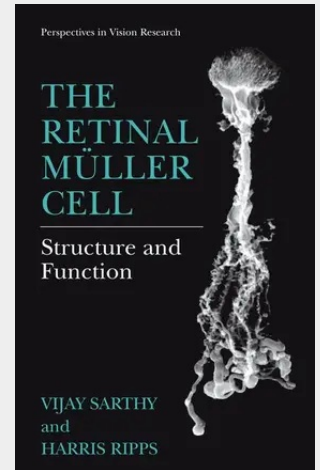


The Retinal Müller Cell

Structure and Function

The human brain contains more than a billion neurons which interconnect to form networks that process, store, and recall sensory information. These neuronal activities are supported by a group of accessory brain cells collectively known as neuroglia. Surprisingly, glial cells are ten times more numerous than neurons, and occupy more than half the brain volume (Hydén, 1961). Although long considered a passive, albeit necessary, component of the nervous system, many interesting and unusual functional properties of glial cells are only now being brought to light. As a result, the status of these cellular elements is approaching parity with nerve cells as a subject for experimental study. The term glia (or glue) seems today to be a misnomer in view of the diverse functions attributed to glial cells. Experimental studies in the last three decades have clearly established that the behavior of glial cells is far from passive, and that they are at least as complex as neurons with regard to their membrane properties. In addition, glial cells are of importance in signal processing, cellular metabolism, nervous system development, and the pathophysiology of neurological diseases. The Müller cell of the vertebrate retina provides a splendid example of an accessory cell that exhibits features illustrating every aspect of the complex behavior now associated with glial cells.

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