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Resumo	The optogenetic tools have been described as valuable techniques to study neural activity through light stimulation, as well as potential neuromodulator approaches in the management of several central nervous system (CNS) diseases. Since the first bacteriorhodopsin protein described as a single-component light-activated regulator of transmembrane ion flow description, in 1980's, the focus has been on channel proteins for neurobiology; however, the advances in engineering techniques showed involvement changes in cellular biological behavior in several types of proteins involved in cell cytoskeleton regulation, motility and gene expression. Although the use of this technology has been published in many papers, a question still remains regarding real results and potential clinical applicability in CNS diseases, as well as the publications scarcity that systematically analyses the published results. Lastly, the aim of this review is to discuss the experimental results, molecular mechanisms and potential clinical applications of optogenetic tools in epilepsy and depression treatment, as well as its applicability in the treatment of CNS tumors.
Fomento	