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A bibliometric analysis of global research trends in autophagy and glioblastomas

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Abstract

Autophagy plays a critical role in the pathogenesis of glioblastoma (GBM) and is increasingly being explored as a therapeutic target to enhance the efficacy of chemotherapy across various malignancies. However, comprehensive systematic reviews focusing on autophagy in GBM remain limited. This study aimed to explore emerging trends and future directions in the field of autophagy and GBM through a bibliometric analysis. Relevant literature was retrieved from the Web of Science Core Collection (WoSCC) on September 10, 2024. Comprehensive analyses were conducted using CiteSpace, VOSviewer, and Scimago Graphica to identify key patterns and developments in the field. A total of 1621 publications spanning 20 years of scientific research were retrieved. China and the USA led in article production, with the International Journal of Molecular Sciences and Cancers being the most prolific journals. China Medical University ranked as the top institution for output. Authors Zhan Li and Joanna Jakubowicz-Gil demonstrated the highest productivity, while Roger Stupp had the highest co-citation count. Recent keywords with strong citation burst strength included "Beclin 1," "epithelial-mesenchymal transition," "chloroquine," "unfolded protein response," and "drug resistance." This bibliometric analysis provides an overview of the fundamental knowledge in the fields of autophagy and glioblastoma, highlighting key areas such as the role of autophagy in glioblastoma therapeutic resistance, the dual functions of autophagy in glioblastoma, and the potential of autophagy regulators when combined with conventional therapies. These topics, along with the underlying mechanisms, are expected to be the central focus of future research.

Keywords: Autophagy; Bibliometric; Citespace; Glioblastomas; Hotspot; VOSviewer.

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