



Special Issue

Immunotherapeutic Approaches for Treatment of Brain Tumors

Guest Editor:

Dr. Terry Lichtor, MD, PhD

Associate Professor,

Neurological Surgery, Rush

University, Rush Medical

College, Rush University Medical

Center in Chicago, Illinois, USA.

E-mail: Terry_Lichtor@rush.edu

Special Issue Introduction

Antigenic differences between normal and malignant cells of the cancer patient form the rationale for clinical immunotherapeutic strategies. One emerging strategy in the treatment of tumors involves stimulation of an immunologic response against the neoplastic cells. Tumor cells may evade immune responses by losing expression of antigens or major histocompatibility complex (MHC) molecules or by producing immunosuppressive cytokines. A variety of strategies have been used to increase the immunogenetic properties of vaccine therapies for brain tumors. The immune response can be augmented by genetic modification of tumor cells to secrete cytokines including IL-2, GM-CSF and interferon-. Alternatively, one can genetically modify the tumor cells to express co-stimulatory molecules such as B7.

Modification of neoplastic cells taken directly from tumor-bearing patients may be difficult. An alternative cell type that can be used for therapeutic immunizations is the dendritic cell (DC), which is a specialized antigen presenting cell. Pre-clinical studies have indicated that immunization with DC pulsed with tumor cell antigens can stimulate a cytotoxic T cell response that is tumor-specific and that engenders protective immunity against CNS tumors. Another strategy is to transfect genomic DNA from the malignant cells into a fibroblast cell line which results in stable integration and expression of the transferred DNA. Immunization of tumor-bearing mice with the DNA-based vaccine results in the induction of cell mediated immunity directed toward the type of tumor from which the DNA was obtained along with prolongation of survival.

The ultimate goal of cancer therapy is the elimination of every remaining tumor cell from the patient. It is unlikely that a single form of therapy is capable of achieving this goal. However, immunotherapy in combination with surgery, radiation therapy and chemotherapy will likely find a place as a new and important means of treatment for patients with brain tumors. For this special issue papers are being solicited that explore the potential of different immunotherapeutic strategies for the treatment of brain tumors along with related aspects of tumor immunotherapy.

Keywords: Immunotherapy, Brain Tumors, Tumor Vaccine, Immune Suppression, Tumor Growth, Gene Therapy

Submission Deadline: July 2018

Benefits

Open Access: the full-text of each published article can be accessed and downloaded from the journal website without any fee.

Rigorous Peer Review: we strictly follow international guidelines (COPE Ethical Guidelines for Peer Reviewers) and ensure rigorous peer review process.

Worldwide Readership: the readers of the journal are from more than 175 countries worldwide.

Wide Promotions: all published articles will be promoted on academic conferences, social networks for scientists or other various channels.

