INNOVATION PARTNERSHIPS
UNIVERSITY OF MICHIGAN

Substituted Oxadiazole and Oxadiazolone as Anti-Cancer Agents

TECHNOLOGY NUMBER: 7653

OVERVIEW

Anthranilic diamide derivatives that modulate the MYC signaling pathway

- Successful treatment of a pancreatic xenograft model with limited side effects
- Effective as either a monotherapy as well as in combination therapy regimens

BACKGROUND

MYC (v-myc myelocytomatosis viral oncogene homolog) is a nuclear DNA-binding transcription factor that has been shown to be involved in many important biological pathways that underlie cell growth, cell-cycle progression, metabolism, and survival. MYC is involved in many cancers, and its expression is elevated or deregulated in up to 70% of human cancers. Down-regulation of MYC leads to cancer cell growth arrest, senescence, enhanced apoptosis, differentiation, and/or tumor regression in mouse models of human cancer. Therefore, MYC is one of the most important targets in cancer treatment, and a need exists to better control its expression and favorably influence the growth of neoplasms.

INNOVATION

Researchers have created an invention that involves the synthesis, use, and pharmaceutical composition/carrier of a series of novel anthranilic diamide derivatives. The anti-proliferative effects of these compounds are likely due to their modulation of the MYC signaling pathway. These agents have been proven to be cytotoxic to a series of cancer cell lines and have successfully treated a xenograft model of pancreatic cancer, a tumor type with limited therapeutic options. The xenograft model thankfully showed few deleterious effects. As such, the pharmaceutical may be used as a monotherapy or in combination with other agents. Furthermore, these compounds are also effective in modulating several signaling pathways and DNA repair, expanding options for their potential research and treatment uses.

PATENT APPLICATION

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Category
Research Tools and Reagents
Life Sciences

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