Environmental Engineering and Management Journal xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
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BENZIMIDAZOLE DERIVATIVES AS POTENT ANTI-CANCER AGENTS AGAINST BREAST AND LUNG CANCER CELL LINE: A REVIEW

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Abstract

Cancer is a one of the most dangerous diseases and is the second-leading cause of death worldwide. It is distinguished by cell cycle dysregulation, which results in a gradual lack of cellular differentiation and uncontrolled cellular proliferation. Among the most prevalent forms of cancer are lung and breast cancer. Breast tissue is the site of origin for breast cancer, which frequently manifests as a lump. Lung cancer typically originates in the lungs and is associated with smoking or exposure to toxic substances. For both kinds, early detection and treatment are essential. Benzimidazole has gained widespread attention in recent years and is an essential heterocyclic pharmacophore used in modern medicinal chemistry. It is a heterocyclic compound present in various natural and biologically active compounds. The structures of benzimidazole derivatives can be thought of as auxiliary isosteres of nucleotides with linked heterocyclic cores. Owing to its structural closeness to naturally occurring nucleotides, benzimidazole and its derivatives demonstrate a wide variety of biological activities. The current study provides a description of the chemistry of numerous modified benzimidazole derivatives and their anticancer effectiveness against cancer cell lines, including MCF7, A549, HepG2, HCT116, MCF7, and MDA-MB-231.

Key words: anticancer activity, benzimidazole, benzimidazole derivatives, cancer, tautomerism

Received: February, 2024; Revised final: November, 2024; Accepted: November, 2024

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