COMPOUND FOR INHIBITING MITOTIC PROGRESSION

BACKGROUND OF THE INVENTION

Priority Claim

[001] This application claims priority from U.S. Provisional Patent Application Serial No. 60/859,340, filed on November 16, 2006, which is hereby incorporated by reference in its entirety.

Field of the Invention

[002] This invention relates to compounds and methods for the treatment of cancer. In particular, the invention provides a compound that inhibits Aurora kinase enzymes, pharmaceutical compositions comprising the compound, and methods of using the compound for the treatment of cancer.

Background of the Invention

[003] According to the American Cancer Society, an estimated 1.4 million Americans were newly-diagnosed with cancer in 2004 and about 560,000 victims died from the disease. While medical advance have improved cancer survival rates, there is a continuing need for new and more effective treatment.

[004] Cancer is characterized by uncontrolled cell reproduction. Mitosis is a stage in the cell cycle during which a series of complex events ensure the fidelity of chromosome separation into two daughter cells. Several current cancer therapies, including the taxanes and vinca alkaloids, act to inhibit the mitotic machinery. Mitotic progression is largely regulated by proteolysis and by phosphorylation events that are mediated by mitotic kinases. Aurora kinase family members (*e.g.*, Aurora A, Aurora B, Aurora C) regulate mitotic progression through modulation of centrosome separation, spindle dynamics, spindle assembly checkpoint, chromosome alignment, and cytokinesis (Dutertre *et al.*, *Oncogene*, 21: 6175 (2002); Berdnik *et al.*, *Curr. Biol.*, 12: 640 (2002)). Overexpression and/or amplification of Aurora kinases have been linked to oncogenesis in several tumor types including those of colon and breast (Warner *et al.*,

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