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Competitor Analysis: Novel Mitotic Kinase Inhibitors

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Abstracts

Product description

The present Competitive Intelligence Report about Novel Mitotic Kinase Inhibitors provides a competitor evaluation in the field of synthetic molecules targeting polo-like kinase 1 (Plk-1), cyclin-dependent kinase (CDK) or aurora kinase for treatment of cancer as of September 2011. Purchase of the downloadable pdf report includes a 6-month online access to the data of the report and any updates since the publication date. Credentials to access the database will be sent by e-mail and allow online work with the project data to print or export an individual report.

Mitosis, a central event in tumor growth, is highly regulated to ensure accurate and equal segregation of genetic materials from parent cells to daughter cells. Main effectors of this process are mitotic spindles and centrosomes.157 Disruption of the process results in aneuploidy, and genomic instability renders the cellular condition optimal for apoptosis to occur. The rationale of targeting mitosis in cancer therapy is substantiated by the successful clinical development of tubulin-disrupting agents, such as vinca alkaloids and taxanes.

The coordination of progression through mitosis is mainly orchestrated by protein phosphorylation insured by several serine/threonine kinases of which the three main mitotic kinase families are the cyclin-dependent kinase CDKs), the polo-like kinases (Plks), and the Aurora kinases.

The Polo-Like Kinases form a family of four different proteins that regulates many aspects of the cell cycle progression. They all share small conserved domains named polo-box required fort protein localization. Only Plk1 that is the most extensively studied, is a true mitotic. Plk2, Plk3 and Plk4 are more likely involved only in interphase.

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Cyclin Dependent Kinases that must associate to a cyclin to become active kinases are key regulators of cell cycle progression. There are now about twelve Cdks. Some CDKs, such as CDK1–CDK4, CDK6 and perhaps CDK11, are involved in progression through the cell cycle, whereas CDK7 has dual roles as a CDK-activating kinase (CAK) and a regulator of the transcriptional machinery. CDK8 and CDK9 seem to have key roles in the control of transcription by RNA polymerase II.

Mammals have three Aurora kinases, named Aurora A, B and C. Aurora A has distinct functions while Aurora B and C share same functions, though all three kinases are involved in the control of many processes required for mitosis.

The report includes a compilation of current active projects in research and development of synthetic molecules targeting polo-like kinase 1 (Plk-1), cyclin-dependent kinase (CDK) or aurora kinase. In addition, the report lists company-specific R&D pipelines of novel mitotic kinase-targeting molecules. Competitor projects are listed in a tabular format providing information on:

Drug Codes,

Target / Mechanism of Action,

Class of Compound,

Company,

Product Category,

Indication,

R&D Stage and additional comments with a hyperlink leading to the source of information.

Index

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About Competitor Analysis Series:

The Competitor Analysis Series delivers NO-FRILLS, but concise information about the pipeline of R&D projects for targets, diseases, technologies and companies at low prices. The information is provided in a tabular format and fully referenced

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