

Competitor Analysis: PI3K-AKT-mTOR Inhibitors

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Abstracts

Product description

The present Competitive Intelligence Report about PI3K-AKT-mTOR Inhibitors provides a competitor evaluation in the field of novel molecular entities inhibiting members of the phosphatidylinositol-3 kinase (PI3K) / Akt / mammalian target of rapamycin (mTOR) pathway for treatment of cancer or inflammatory diseases as of June 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.

The phosphatidylinositol-3-kinase (PI3K)/Akt/mammalian target of rapamycin (mTOR) signaling pathway plays a critical role in the regulation of cellular growth, survival, and proliferation. Dysregulation of this pathway, as a result of genetic mutations and amplifications, is implicated in a variety of human cancers. Therefore, each of the three components of the pathway alone and in combination has emerged as a key target for the treatment of cancer. While first generation therapeutic agents currently in clinical evaluation preferably are pan-PI3K inhibitors, next generation selective PI3K inhibitors are targeting one or several different subclasses.

However, only a short time ago, the paradigm existed that drugs targeted to the four PI3K class I isoforms would be too toxic for use in cancer therapy due to effects on physiologic signaling. Since that time, studies have delineated the roles of these four isoforms in nonpathologic signaling as well as their roles in cancer. An extensive effort has gone into developing agents that inhibit one or more PI3K isoforms, e.g. alpha and beta, as well as closely related proteins implicated in cancer. These agents have proved to be tolerable and therapeutically beneficial in animal studies, and a number are in clinical testing.

Numerous components of the PI3K pathway play an important role in the expression and activation of inflammatory mediators, inflammatory cell recruitment, immune cell function, airway remodelling and corticosteroid insensitivity in asthma. More recently studies exploring the specific roles of different PI3K catalytic subunit isoforms in asthma have been initiated. Several of these have highlighted the importance of the delta isoform as a novel target for therapeutic intervention in asthma.

Two mTOR complexes have been characterized, termed mTORC1 (mTOR complex-1) and mTORC2. mTORC1 phosphorylates the hydrophobic motif of S6K, whereas mTORC2 phosphorylates the hydrophobic motif of Akt and SGK. The central role of mTOR in controlling key cellular growth and survival pathways has sparked interest in discovering mTOR inhibitors that bind to the ATP site and therefore target both mTORC2 and mTORC1 (mTORC2 is resistant to rapamycin).

The report includes a compilation of current active projects in research and development of PI3K-AKT-mTOR inhibitors in oncology and other indications. In addition, the report lists company-specific R&D pipelines of PI3K-AKT-mTOR inhibitors. 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

Selective PI3K Inhibitors

Dual PI3K and mTOR Inhibitors

Other Dual-Targeting PI3K Inhibitors

Selective AKT Inhibitors

Dual and Multi-Targeting AKT Inhibitors

Selective mTOR Inhibitors

Dual mTORC1/2 Inhibitors

Others

Corporate PI3K-AKT-mTOR Inhibitor R&D Pipelines
About La Merie

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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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