

# Global Cancer Tyrosine Kinase Inhibitors Market & Clinical Pipeline Outlook 2020

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## Abstracts

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The global increase in the prevalence of cancer and the increasing recognition of the therapeutic and commercial opportunities offered by new oncology treatments have provided a major incentives for the pharmaceutical industry to pursue the development of new agents for the treatment of cancer. To tackle the ever rising global cancer burden, the cancer treatment is inclining towards the targeted drug therapy due to the numerous drawbacks associated with conventional chemotherapy. Targeted drug therapy includes targeting various signaling pathways associated to the tyrosine kinase receptors. Ample of studies have been performed which confirm their intrinsic involvement of tyrosine related pathways in development of the tumors.

Until the late 1980s, it was thought of as impossible to target protein kinases by the tractable drugs, the reason lied in the presumed need to compete with adenosine triphosphate (ATP) as well as concerns regarding selectivity of the potential drugs. Since then, considerable progress has been made, and the past few years have seen a number of kinase inhibitors which have entered the market. Till now, 518 protein kinases have been encoded from the human genome; we call it as Human Kinome. From the encoded human genome, 90 kinases belong to the group of tyrosine kinases. The tyrosine kinase group consists of approximately 30 families, for example the VEGFR family and the fibroblast growth factor receptor (FGFR) family. Six other groups have been identified whose kinases primarily phosphorylate serine and threonine residues.

Tyrosine kinases play the most critical part in the modulation of growth factor signaling. Activated forms of these enzymes can cause increases in tumor cell proliferation and

growth, induce antiapoptotic effects, and promote angiogenesis and metastasis. In addition to activation by growth factors, protein kinase activation by somatic mutation is a common mechanism of tumor genesis. Because all of these effects are initiated by receptor tyrosine kinase activation, they are key targets for inhibitors.

The TKI drug discovery has evolved dramatically in recent years. Along with the launch of new drugs, efficient approaches for the development of potent and selective inhibitors with desirable properties have become established. At present kinase inhibitors are being designed from crystallography to deal with different binding modes and unexpected inhibitor induced conformational rearrangements. Much of kinase inhibitors which are supposed to enter in market in near future are rationally designed through high throughput screening and empirical optimization on the basis of structure–activity relationships. Sophisticated proteomic approaches have been developed in conjunction with panels of enzyme assays to allow for a more thorough annotation of kinase inhibitor selectivity.

Now with the considerable amount of research and advancement in technology, kinase signaling pathway is seen as the largest class of potential drug targets by the pharmaceutical industry. Over the last decades, billions have been spent and huge efforts have been taken in basic and clinical cancer research. About a decade ago, the race between drugs and cancer cells reached a new level by introduction of tyrosine kinase inhibitors into pharmacological anti-cancer therapy.

Clinical pipeline of cancer tyrosine kinase inhibitor therapeutics is quite strong due to which competitive product is expected to enter continuously in global market. Owing to increasing cancer incidences, it has become imperative to take necessary steps to introduce innovative tyrosine kinase inhibitor therapeutics in global market.

Technological advancements may allow the investigators to develop products having high safety and efficacy levels along with minimized side effects but it will take some time. Various products are at different stages of clinical trials which will be introduced in global market in coming years. Higher cost effectiveness is expected due to which sales is expected to increase and profit margins will increase. With all these development, the future of tyrosine kinase therapeutics looks optimistic.

“Global Cancer Tyrosine Kinase Inhibitors Market & Clinical Pipeline Outlook 2020”  
Report Highlights:

Introduction to Cancer Tyrosine Kinase Inhibitors

Signaling Pathway of Receptor Tyrosine Kinase

Advantage of Tyrosine Kinase Inhibitors for Treatment of Cancer

Applications of Tyrosine Kinase Inhibitor in Cancer Therapy

Global Tyrosine Kinase Inhibitors Market Overview

Global Cancer Tyrosine Kinase Inhibitors Clinical Pipeline by Company,  
Indication & Phase

Global Cancer Tyrosine Kinase Inhibitors Clinical Pipeline: 411 Drugs

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AB Science  
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Array BioPharma  
ARIAD Pharmaceuticals  
Astellas Pharma (OSI Pharmaceuticals)  
AstraZeneca  
Bayer HealthCare  
Biocad  
Biocon  
Boehringer Ingelheim  
Bristol-Myers Squibb  
Celera Genomics Group  
Celgene Corporation (Avila Therapeutics)  
Celltrion  
Chugai Pharmaceutical  
Cytopia Research  
Daiichi Sankyo (Ambit Biosciences Corporation)

Dyax  
Eisai Co Ltd  
Exelixis  
GlaxoSmithKline  
Hanmi Pharmaceutical  
Novartis  
Onyx Pharmaceuticals  
Pfizer  
Plexxikon  
Reliance Life Sciences  
Roche  
Shire  
Synthon  
Wyeth  
Xcovery  
Zydus Cadila

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