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
Contents:

1. The Journey: Genesis to Present of Tyrosine Kinase Inhibitors

2. Tyrosine Kinase: An Overview

3. Tyrosine Kinases Inhibitors: Promising Tools for Targeted Cancer Therapies

4. Types of Tyrosine Kinase Receptors
   4.1 Epidermal Growth Factor Receptor
      4.1.1 Types of Epidermal Growth Factor Receptor
      4.1.2 Epidermal Growth Factor Receptor & Ligands
      4.1.3 Epidermal Growth Factor Receptor & Cancers
   4.2 Platelet-Derived Growth Factor Receptor (PDGFR)
      4.2.1 Types of Platelet-Derived Growth Factor Receptor
      4.2.2 Platelet-Derived Growth Factor Receptor & Ligands
      4.2.3 Platelet-Derived Growth Factor Receptor & Cancer
   4.3 Insulin-Like Growth Factor 1 Receptor (IGF-1R)
      4.3.1 Insulin-Like Growth Factor 1 Receptor & its Ligands
      4.3.2 Insulin-Like Growth Factor 1 Receptor & its role in Cancer

5. Signaling Pathway of Receptor Tyrosine Kinase
   5.1 PI3K/Akt Pathway
   5.2 Ras/Raf/ERK1/2 Pathway
   5.3 The JAK/STAT Pathway

6. Advantage of Tyrosine Kinase Inhibitors for Treatment of Cancer

7. BCR-ABL Tyrosine Kinase Inhibitors
   7.1 Imatinib
   7.2 Nilotinib
   7.3 Dasatinib
   7.4 Ponatinib
   7.5 Bosutinib

8. Epidermal Growth Factor Receptor Kinase Inhibitors Tyrosine
   8.1 Gefitinib
   8.2 Erlotinib
   8.3 Lapatinib
   8.4 Icotinib
   8.5 Canertinib
   8.6 Afatinib
   8.7 Neratinib
   8.8 Poziotinib

9. Vascular Endothelial Growth Factor Tyrosine Kinase Inhibitors
   9.1 Sunitinib
   9.2 Sorafenib
   9.3 Vandetanib
   9.4 Pazopanib
   9.5 Axitinib
   9.6 Cediranib

10. Applications of Tyrosine Kinase Inhibitor in Cancer Therapy
    10.1 Role of Tyrosine Kinase Inhibitors in the First-Line Treatment of Advanced Non-Small Cell Lung Cancer
    10.2 Mitigation of Chronic Myeloid Leukaemia
    10.3 Role of tyrosine Kinase Inhibitors in Combating Colorectal Cancer
10.4 Gastrointestinal Cancer & Tyrosine Kinase Inhibitor
10.5 Tyrosine Kinase Inhibitor in Breast Cancer

11. Global Tyrosine Kinase Inhibitors Market Overview
11.1 Current Market Scenario
11.2 Cancer Tyrosine Kinase Inhibitors Pipeline Overview

12. Global Tyrosine Kinase Inhibitor Market Dynamics
12.1 Favorable Driving Factors
12.1.1 Research & Development
12.1.2 Strong Clinical Pipeline
12.1.3 Increasing Disease Incidences
12.1.4 Unmet Requirement of Completely Curative Agents
12.1.5 Advancement in Manufacturing Capabilities of the Biopharmaceutical Companies
12.2 Challenges Countered by Tyrosine Kinase Inhibitor Market
12.2.1 Strict Regulatory Guidelines for Approval of Prospective Drug
12.2.2 Long Phase of Research & Development
12.2.3 Funding of Clinical Trials
12.2.4 Highly Competitive Market

13. Global Tyrosine Kinase Inhibitor Market Future Prospects

14. Global Cancer Tyrosine Kinase Inhibitors Clinical Pipeline by Company, Indication & Phase
14.1 Unknown
14.2 Research
14.3 Preclinical
14.4 Clinical
14.5 Phase-I
14.6 Phase-I/II
14.7 Phase-II
14.8 Phase-II/III
14.9 Phase-III
14.10 Preregistration
14.11 Registered

15. Marketed Cancer Tyrosine Kinase Inhibitors Clinical Insight by Brand Name, Company & Indication
15.1 Blood Cancer
15.1.1 Ibrutinib (Imbruvica)
15.1.2 Ponatinib (Iclusig)
15.1.3 Dasatinib (Tasigna)
15.1.4 Nilotinib (Tasigna)
15.1.5 Bosutinib (Bosulif)
15.1.6 Radotinib (Supect)
15.2 Breast Cancer
15.2.1 Trastuzumab Subcutaneous (Herceptin SC)
15.2.2 Pertuzumab (Omnitarg & Perjeta)
15.2.3 Lapatinib (Tykerb & Tyverb)
15.2.4 Trastuzumab Biosimilar (CANMAb & Hertraz)
15.2.5 Trastuzumab Biosimilar (Vivitra)
15.3 Gastric Cancer
15.3.1 Apatinib
15.4 Non-small cell lung cancer
15.4.1 Afatinib (Gilotrif, Giotrif & Tomtovok)
15.4.2 Nintedanib (Ofev & Vargatef)
15.4.3 Ceritinib (Zykadia)
15.4.4 Crizotinib (Xalkori)
15.4.5 Icotinib (Conmana)
15.4.6 Gefitinib (Iressa)
15.4.7 Alectinib (Alecensa)
15.5 Renal Cancer
15.5.1 Axitinib (Inlyta)
15.6 Thyroid Cancer
15.6.1 Vandetanib (Caprelsa, Zactima & Zictifa)
15.7 Multiple
15.7.1 Sunitinib (Sutent)
15.7.2 Lenvatinib (Lenvima)
15.7.3 Regorafenib (Stivarga)
15.7.4 Imatinib (Gleevec, Glivec & Ruvise)
15.7.5 Trastuzumab (Herceptin)
15.7.6 Erlotinib (Tarceva)
15.7.7 Ramucirumab (Cyramza)
15.7.8 Cabozantinib (COMETRIQ, Cabometyx & Cometriq)
15.7.9 Nimotuzumab (BIOMAb EGFR, CIMAher, Cimaher, Taixinsheng, TheraCIM, Theraloc & VECTHIX)
15.7.10 Sorafenib (Nexavar)
15.7.11 Imatinib (Imatib)

16. Discontinued & Suspended Cancer Tyrosine Kinase Inhibitors Clinical Pipeline by Company & Phase
16.1 No Development Reported
16.2 Discontinued
16.3 Suspended

17. Competitive Landscape
17.1 AB Science
17.2 Advenceh Laboratories
17.3 Array BioPharma
17.4 ARIAD Pharmaceuticals
17.5 Astellas Pharma (OSI Pharmaceuticals)
17.6 AstraZeneca
17.7 Bayer HealthCare
17.8 Biocad
17.9 Biocon
17.10 Boehringer Ingelheim
17.11 Bristol-Myers Squibb
17.12 Celera Genomics Group
17.13 Celgene Corporation (Avila Therapeutics)
17.14 Celltrion
17.15 Chugai Pharmaceutical
17.16 Cytoxia Research
17.17 Daiichi Sankyo (Ambit Biosciences Corporation)
17.18 Dyax
17.19 Eisai Co Ltd
17.20 Exelixis
17.21 GlaxoSmithKline
17.22 Hanmi Pharmaceutical
17.23 Novartis
17.24 Onyx Pharmaceuticals
17.25 Pfizer
17.26 Plexxikon
17.27 Reliance Life Sciences
17.28 Roche
17.29 Shire
17.30 Synthet
17.31 Wyeth
17.32 Xcovery
17.33 Zydus Cadila

List of Figures:
Figure 3-1: Pictorial View of Signaling Pathways Involved on Activation of Tyrosine Kinase Receptor
Figure 4-1: Different Types of Tyrosine Kinase Receptors
Figure 5-1: Various Possible Signaling Pathways Taken by Receptor Tyrosine Kinase
Figure 5-2: Steps Involved in PI3K/Akt Pathway
Figure 5-3: Signaling Pathway Followed by Ras/Raf/ERK1/2 Pathway
Figure 5-4: Signaling Pathway of JAK STAT Tyrosine Kinase Receptors
Figure 10-1: Applications of Tyrosine Kinase Inhibitors in Cancer Therapy
Figure 11-1: Global Cancer Kinase Inhibitors Market Opportunity (US$ Billion), 2015-2020
Figure 11-2: Global Cancer Tyrosine Kinase Inhibitors Clinical Pipeline by Phase (%), 2016
Figure 11-3: Global Cancer Tyrosine Kinase Inhibitors Clinical Pipeline by Phase (Numbers), 2016
Figure 11-4: Global Cancer Tyrosine Kinase Inhibitors Clinical Pipeline by Phase (%), 2016
Figure 11-5: Global Cancer Tyrosine Kinase Inhibitors Clinical Pipeline by Phase (Numbers), 2016
Figure 12-1: Various Driving Factors Involved in Establishment of Tyrosine Kinase Inhibitor Market
Figure 12-2: List of the Drugs In Different Phases of Clinical Trials
Figure 12-3: List of Main Challenges Which Hamper Development of Tyrosine Kinase Inhibitors
Figure 17-1: AB Scicence - Clinical Pipeline
Figure 17-2: Advenchen Laboratories - Clinical Pipeline
Figure 17-3: ARIAD - Clinical Pipeline
Figure 17-4: Biocon - Clinical Pipeline
Figure 17-5: Celgene Corporation - Clinical Pipeline
Figure 17-6: Daiichi Sankyo - Clinical Pipeline
Figure 17-7: Novartis - Clinical Pipeline
Figure 17-8: Plexxikon - Clinical Pipeline
Figure 17-9: Roche - Clinical Pipeline
Figure 17-10: Zydus Cadila - Clinical Pipeline

List of Tables:
Table 3-1: Recently Approved Tyrosine Kinase Inhibitors
Table 4-1: ErbB Family Members & Their Ligands
Table 4-2: Platelet-Derived Growth Factor Receptor & Ligands
Table 4-3: Receptor Platelet Derived Tyrosine Kinase & the Cancers Associated
Table 4-4: Insulin Receptor Family Members & Its Ligands
Table 7-1: List of Tyrosine Kinase Inhibitors Developed against BCR-ABL Receptors
Table 8-1: List of the Drugs Targeting EFRGR Receptor
Table 9-1: Different Drugs associated with The Treatment of Angiogenesis Related Cancers
Table 10-1: Tyrosine Kinase Inhibitors Targeting Lung Cancer
Table 10-2: Drugs being Developed to Treat Hematological Malignancies
Table 10-3: Drugs Used to Manage Breast Cancer
Table 10-4: Some of the Tyrosine Kinase Inhibitors Developed to Treat Metastatic Melanoma
Table 11-1: Drugs to Enter the Market in Near Future

Ordering:
Order Online - http://www.researchandmarkets.com/reports/3798047/
Order by Fax - using the form below
Order by Post - print the order form below and send to

Research and Markets,
Guinness Centre,
Taylors Lane,
Dublin 8,
Ireland.
Fax Order Form
To place an order via fax simply print this form, fill in the information below and fax the completed form to 646-607-1907 (from USA) or +353-1-481-1716 (from Rest of World). If you have any questions please visit http://www.researchandmarkets.com/contact/

Order Information
Please verify that the product information is correct and select the format(s) you require.

<table>
<thead>
<tr>
<th>Product Name:</th>
<th>Global Cancer Tyrosine Kinase Inhibitors Market &amp; Clinical Pipeline Outlook 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web Address:</td>
<td><a href="http://www.researchandmarkets.com/reports/3798047/">http://www.researchandmarkets.com/reports/3798047/</a></td>
</tr>
<tr>
<td>Office Code:</td>
<td>SCBRGYDL</td>
</tr>
</tbody>
</table>

Product Formats
Please select the product formats and quantity you require:

<table>
<thead>
<tr>
<th>Product Format</th>
<th>Quantity</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic (PDF) - Single User</td>
<td></td>
<td>USD 3000</td>
</tr>
<tr>
<td>Hard Copy</td>
<td></td>
<td>USD 3600 + USD 58 Shipping/Handling</td>
</tr>
<tr>
<td>CD-ROM</td>
<td></td>
<td>USD 3600 + USD 58 Shipping/Handling</td>
</tr>
<tr>
<td>Electronic (PDF) - Enterprisewide</td>
<td></td>
<td>USD 6000</td>
</tr>
</tbody>
</table>

* Shipping/Handling is only charged once per order.

Contact Information
Please enter all the information below in **BLOCK CAPITALS**

<table>
<thead>
<tr>
<th>Title:</th>
<th>Mr [ ]</th>
<th>Mrs [ ]</th>
<th>Dr [ ]</th>
<th>Miss [ ]</th>
<th>Ms [ ]</th>
<th>Prof [ ]</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Name:</td>
<td></td>
<td></td>
<td></td>
<td>Last Name:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Email Address: *</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job Title:</td>
<td></td>
<td></td>
<td></td>
<td>Organisation:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Address:</td>
<td></td>
<td></td>
<td></td>
<td>City:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Postal / Zip Code:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Country:</td>
<td></td>
<td></td>
<td></td>
<td>Phone Number:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fax Number:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Please refrain from using free email accounts when ordering (e.g. Yahoo, Hotmail, AOL)
Payment Information

Please indicate the payment method you would like to use by selecting the appropriate box.

☐ Pay by credit card: You will receive an email with a link to a secure webpage to enter your credit card details.

☐ Pay by check: Please post the check, accompanied by this form, to:

Research and Markets,
Guinness Center,
Taylors Lane,
Dublin 8,
Ireland.

☐ Pay by wire transfer: Please transfer funds to:

Account number 833 130 83
Sort code 98-53-30
Swift code ULSBIE2D
IBAN number IE78ULSB98533083313083
Bank Address Ulster Bank,
27-35 Main Street,
Blackrock,
Co. Dublin,
Ireland.

If you have a Marketing Code please enter it below:

Marketing Code: _______________________

Please note that by ordering from Research and Markets you are agreeing to our Terms and Conditions at http://www.researchandmarkets.com/info/terms.asp

Please fax this form to:
(646) 607-1907 or (646) 964-6609 - From USA
+353-1-481-1716 or +353-1-653-1571 - From Rest of World