GIST management requires an understanding of mutation status

By Jim Hughes
LRG Clinical Trials Coordinator

Mutation status is a predictor of response to standard imatinib and sunitinib therapy. Mutation status may also have prognostic value regarding the potential aggressive behavior of certain mutations. For high risk or advanced GIST patients, whether newly diagnosed or longer term survivors, understanding genetic mutation is a necessary component of GIST management strategy. Mutation testing is recommended for all GIST patients.

At the recent 2009 American Society of Clinical Oncologists conference, Dr. Chris Corless gave an oral presentation on the role of tumor genotyping in optimizing the treatment of GIST. Dr. Corless’ presentation emphasized the integral role of genotyping in GIST treatment.

One slide showed the results of an informal survey he conducted among colleagues in the United States and Europe concerning the percentage of newly diagnosed GIST patients who have mutation testing:

- Germany- 40% to 50%
- France- 60%
- United States- 2% - 20% (estimated)

In Dr Corless’ words, “...in the US we are lagging far behind...We are not doing all that good a job of genotyping…”

Dr. Corless noted possible barriers to testing. First among them was the perception (among clinicians) that testing “is not critical to treatment...so we don’t necessarily need to bother”. Then he noted “there is the hassle factor, because not all labs offer the testing and you (oncologists) have to reach out and find a lab to do it...And there is the concern over costs.”

The availability, hassle, and cost issues have been solved with the advent of the GIST Collaborative Tissue Bank. Patients can now get GIST mutation testing for free. The test is done by Dr. Corless’ team at Oregon Health & Science University (OHSU), arguably one of the best in the United States for GIST.

The perception issue may be more persistent. This was evident at the meeting during the question and answer period when Corless was asked about the potential utility of mutation testing in gastric GIST “which is probably overwhelmingly exon 11”. Citing the risk of a potential PDGFRA mutation, Dr. Corless responded that, “If I was diagnosed with a gastric GIST and it had any mitotic activity, I would definitely get genotyping done.”

Assuming the perception issue remains, patients who understand the need for mutation testing will be better equipped to address this issue with their medical team.

The National Comprehensive Cancer Network (NCCN) Clinical Practice Guidelines for GIST recommends mutation testing for all GISTs as part of the diagnostic process. The NCCN authors include several recognized GIST specialists who both treat and study GIST.

These are the consensus guidelines for managing GIST in the US.

Primary mutation refers to the mutation status of the primary tumor or the tumor...
FROM PAGE 1

Genotype can predict response to standard therapy.
In the best case, the odds are roughly one in four that the primary mutation is less responsive to imatinib therapy. If the primary tumor is in the lower GI tract or outside the GI tract, the odds increase that it will be less responsive. For newly diagnosed patients the substantial possibility of a non-responsive GIST is the main reason for mutation testing.

Patients who are considering adjuvant therapy can also benefit from mutation testing. A genotype that is more aggressive could be a key factor in the decision to start adjuvant therapy. KIT exon 11 deletions of codons 557 and 558 are associated with a more malignant GIST. If a resected GIST tumor was in a borderline risk area based on size and mitotic rate, knowing if it was this mutation might help with decision making.

Patients considering neoadjuvant imatinib therapy might also benefit. PDGFRA mutation D842V does not respond to imatinib. A genotype that does not respond to imatinib could be a key factor in the decision to not delay surgery while undergoing neoadjuvant treatment.

There is also a time value with mutation testing. Should resistance eventually occur, it will take some time to get results and select the best treatment plan. Having primary mutation status in hand can avoid lost time while managing progression.

Patients lacking mutation status and experiencing early resistance are prime candidates for mutation testing.

Mutation situations that can lead to early resistance include:

- KIT exon 9 mutant GIST has been shown to respond better to 800 mg of imatinib in the clinic. KIT exon 9 mutant GIST may also respond better to sunitinib therapy.
- PDGFRA D842V mutant GIST is resistant to imatinib and sunitinib and has been shown to respond to both dasatinib and HSP90 inhibitors in the lab. For this mutation it may be prudent to go directly to dasatinib therapy or into an HSP90 trial.
- Wildtype GIST has shown variable response to imatinib. Wildtype has been shown to respond better to sunitinib in the clinic and nilotinib in the lab. Wildtype GIST has also recently been shown to over-express IGF1R and to sometimes over-express IGF1R and to sometimes

The Life Raft Group

Who are we, what do we do?
The Life Raft Group (LRG) directs research to find a cure for a rare cancer and help those affected through support and advocacy until we do.
The LRG provides support, information and assistance to patients and families with Gastrointestinal Stromal Tumor (GIST). The LRG achieves this by providing an online community for patients and caregivers, supporting local in-person meetings, patient education through monthly newsletters and webcasts, one-on-one patient consultations, and most importantly, managing a major research project to find the cure for GIST.

Disclaimer
We are patients and caregivers, not doctors. Information shared is not a substitute for discussions with your doctor. For the very latest information, see the LRG Clinical Trials database at: http://liferaftgroup.org/treat_trials.html.

Tissue from the first surgery or biopsy before imatinib therapy. The tissue is usually collected as part of the GIST diagnostic process. The test is most often performed immediately after the first surgery or biopsy. But it can be performed anytime, even years later, using the paraffin tissue blocks stored by the hospital where the first surgery or biopsy took place.

Large series of primary GIST tumors have been analyzed and mutation frequency has been established over time. Looking at these mutation frequencies, the patterns of occurrence by organ and the patterns of imatinib response one can make some estimations of risk Table 1).

Genotyping for newly diagnosed GIST patients

Genotype can be prognostic. There are many factors that drive malignancy in cancer. Although these are not all understood, primary GIST genotype has been noted many times in the research literature.

Growth and progression of Wildtype and PDGFRA mutant tumors appears to be slower than KIT-mutant

Tumors with KIT exon 9 mutation are more aggressive than other GISTs

Tumors with KIT exon 11 deletions (especially codons 557-558) appear more likely to progress than other types of GIST.

<table>
<thead>
<tr>
<th>Mutation</th>
<th>Exon</th>
<th>Region</th>
<th>Location</th>
<th>Freq. %</th>
<th>IM response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wild Type</td>
<td>11</td>
<td>Juxtamembrane</td>
<td>all sites</td>
<td>67%</td>
<td>Best response</td>
</tr>
<tr>
<td>KIT</td>
<td>n/a</td>
<td>N/A</td>
<td>all sites</td>
<td>13%</td>
<td>Less</td>
</tr>
<tr>
<td>PDGFRA</td>
<td>18</td>
<td>D842 Activation Loop</td>
<td>stomach, mesentery, omentum</td>
<td>5%</td>
<td>Resistant</td>
</tr>
</tbody>
</table>

- These rare (1% or less each) primary mutations include KIT exons 13 & 17 PDGFRA exons 12 & 14 & 18 (not in D842) as well as the familial and syndromic GISTs. Data for most of these is sparse and not definitive.
- All sites = all sites along the gastrointestinal tract (esophagus, stomach, small intestine, colon and rectum).

See Page 3
harbor SDH mutations. Both these new targets are being addressed in later phase clinical trials for IGF-1R inhibitors and drugs that augment the mitochondrial respiration function lost when SDH is mutated. These trials could be options if mutation status is known and these tests have been included.

Genotyping for patients on longer term imatinib therapy

Patients who are longer term responders to imatinib can also benefit from mutation testing. Researchers attribute 80 percent and more of the resistance in GIST to the emergence of resistant mutations. This is clearly the case in patients with KIT exon 11 primary mutations. The effect of imatinib is to suppress typically responsive exon 11 mutations. Researchers believe that resistant mutation cells are present from the beginning of GIST. As the dominant primary exon 11 mutants are suppressed these other mutations emerge and are now better able to compete for cell growth resources in the established or new tumor beds.

It has also been shown that GIST can develop more than one secondary mutation and that even a single tumor may have multiple mutations. Secondary mutations seem to be additive. The primary mutation is still there.

The secondary mutations show up as a tumor within a tumor or as new growth or as a “rogue” tumor that grows when others are stable. Highly sensitive genetic analyses have shown the presence of multiple mutations in the typical imatinib/sunitinib resistant GIST. Knowing the primary mutation (exon 11) is helpful in anticipating the pattern of resistance. However, because of the likelihood of multiple secondary mutations resistance genotype is of limited use in the clinic.

Broad spectrum drugs like sunitinib, sorafenib and dasatinib have been shown to be effective against different sets of secondary mutations. No one drug covers them all, and each drug has its own set of side effects. Currently sorafenib appears to have the broadest spectrum of potency across a wide range of secondary mutations. Secondary resistance may also be managed in clinical trials of drugs that target downstream signal points or that target irrespective of mutation status (HSP90 and HDAC inhibitors) (See figure below).

This topic will be addressed more fully in a series of Clinical Trial Bulletin articles starting this month with an overview of mutation status and clinical trial options.

Free mutational testing is available via the GIST Collaborative Tissue Bank. The donation process is detailed on the LRG website at www.liferaftgroup.org/TissueBank.html. Patients can also contact the LRG at 973-837-9092 or lraft@liferaftgroup.org to inquire about donating tissue for research and as part of the process obtaining a free GIST mutation analysis.

For patients seeking new options or just reassurance, mutation analysis via the GIST Collaborative Tissue Bank can serve another vital purpose. Tissue donations will be a contribution to the largest organized research effort to find a cure for GIST. In addition to obtaining mutation status, patients will be giving key GIST researchers access to data about the nature and progress of GIST before, during and after standard therapy. Patients and their medical teams can gain valuable information for managing GIST and also make a lasting contribution by donating to the GIST Collaborative Tissue Bank.

### Frequency of GIST Secondary KIT Mutations by Exon and Protein Region - with Inhibitor Potency

<table>
<thead>
<tr>
<th>Exon of Secondary Mutation</th>
<th>ATP Binding Pocket</th>
<th>Kinase Insert</th>
<th>Activation Loop</th>
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<tr>
<td>13</td>
<td>Sunitinib</td>
<td>Sunitinib</td>
<td>Sorafenib</td>
</tr>
<tr>
<td>14</td>
<td>Sunitinib</td>
<td>Sorafenib</td>
<td>Sorafenib</td>
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<tr>
<td>15</td>
<td>Sunitinib</td>
<td>Sorafenib</td>
<td>Sorafenib</td>
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<tr>
<td>16</td>
<td>Sorafenib (except D816V)</td>
<td>Sorafenib</td>
<td>Sorafenib</td>
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<tr>
<td>17</td>
<td>“Gatekeeper”</td>
<td>Sorafenib</td>
<td>Sorafenib</td>
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</table>

Lasota, Miettinen: Histopathology 2008, 53, 245–266
Fletcher, J. ASCO 2009
Note: Trials are first grouped together by treatment phase. For example, the first grouping lists 2 trials that are open to patients in all treatment stages. Each trial description also lists the treatment stage under the "Stage" heading. Trials that are specifically for GIST are listed first. Trials are then sorted by phase in descending order) and then by drug name. Trial sites are sorted by country, state and then city.

**Treatment Stage: All**

**Imatinib**
*Imatinib Mesylate in Treating Patients With Liver Metastasis From a Gastrointestinal Stromal Tumor*

- **Phase:** 2
- **Stage:** All
- **Conditions:** Gastrointestinal Stromal Tumor
- **Drug Type:** KIT/PDGFRA inhibitor
- **Strategy:** Block KIT
- **NCT #:** NCT00764595
- **Contact:** See site contact info below
  
  Niigata University Medical and Dental School
  Niigata, Japan
  81-25-227-2228
  Tatsuo Kanda, MD

**Treatment Stage: First-line**

**Imatinib + Bevacizumab**
*Imatinib Mesylate With or Without Bevacizumab in Treating Patients With Metastatic or Unresectable Gastrointestinal Stromal Tumor*

- **Phase:** 3
- **Stage:** First-line
- **Conditions:** Gastrointestinal Stromal Tumor
- **Drug Type:** KIT/PDGFRA inhibitor + VEGF inhibitor (antibody)
- **Strategy:** Block KIT
  Block tumor blood vessel growth
- **NCT #:** NCT00324987
- **Contact:** See each trial site.

**Surgery**
*Surgery in Treating Patients With Liver Metastasis From a Gastrointestinal Stromal Tumor*

- **Phase:** 2
- **Stage:** All
- **Conditions:** Gastrointestinal Stromal Tumor
- **Drug Type:** Surgery
- **Strategy:** Surgery
- **NCT #:** NCT00769782
- **Contact:** See site contact info below
  
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*USC/Norris Comprehensive Cancer Center*
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James M. Atkins, MD

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<thead>
<tr>
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<th>Contact</th>
<th>Phone</th>
<th>Email</th>
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<tr>
<td>Columbus - CCOP</td>
<td>Philip J. Kuebler, MD</td>
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<tr>
<td>Dayton Clinical Oncology Program - CCOP</td>
<td>Howard M Gross, MD</td>
<td>937-395-8678</td>
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<td>Paul L. Schaefer, MD</td>
<td>419-255-5433</td>
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<tr>
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<td>503-216-6260</td>
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<tr>
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<td>Michael Heinrich, MD</td>
<td>503 494-6594</td>
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<td>Geisinger Clinical &amp; Medical Center - CCOP</td>
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<td>Margeret von Mehren, M.D.</td>
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<td>Cancer Therapy and Research Center</td>
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<td>University of Texas Health Science Center</td>
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<td>Fred Hutchinson Cancer Research Center</td>
<td>Saul E. Rivkin, MD</td>
<td>206-386-2441</td>
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<td>Marshfield Medical Research &amp; Education Foundation - CCOP</td>
<td>Mohammad Q. Khan, MD, FACP</td>
<td>715-387-5426</td>
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**Masitinib, (AB1010)**

**Efficacy and Safety of Masitinib (AB1010) in Comparison to Imatinib in Patients With Gastro-Intestinal Stromal Tumour**

- **Phase:** 3
- **Stage:** First-line
- **Conditions:** Gastrointestinal Stromal Tumor
- **Drug Type:** KIT/PDGFRα inhibitor
- **Strategy:** Block KIT
- **NCT #:** NCT00812240
- **Contact:**
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  - Antoine Adenis, M.D.
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- **Hopital Europen Georges Pompidou**
  - Paris, France

- **Hopital Robert Debre**
  - Reims, France

- **Hopital Charles Nicolle**
  - Rouen, France

- **Centre Rene Huguenin**
  - Saint-Cloud, France

- **Hopital Saint-Georges**
  - Beirut, Lebanon

- **American University Hospital**
  - Beirut, Lebanon

- **Middle East Institute of Health**
  - Bsalim, Lebanon

- **Hopital Saint-Joseph**
  - Dora, Lebanon

- **Hamoud Hospital**
  - Saida, Lebanon

- **MD Anderson - Orlando**
  - Orlando, FL USA
  - Clinical Trials Office - M.D. Anderson Cancer Center, 713-792-3245
  - Jon Trent, MD, PhD

- **Henry Ford Health System**
  - Detroit, MI USA

- **Beth Israel Medical Center**
  - New York, NY USA
Nilotinib or Imatinib
Phase III, Open-Label Study of Nilotinib Versus Imatinib in GIST Patients

| Phase: 3 | Stage: First-line |
| Conditions: Gastrointestinal Stromal Tumor |
| Drug Type: KIT/PDGFRA inhibitor |
| Strategy: Block KIT |
| NCT #: NCT00785785 |
| Contact: Novartis Pharmaceuticals +1-800-340-6843 |

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**Dasatinib (BMS-354825)**

*Dasatinib as First-Line Therapy in Treating Patients With Gastrointestinal Stromal Tumors*

- **Phase:** 2
- **Stage:** First-line
- **Conditions:** Gastrointestinal Stromal Tumor
- **Drug Type:** KIT/PDGFRA inhibitor + SRC inhibitor
- **Strategy:** Block KIT + Block KIT
- **Site contact info below:**
  - Centre Hospitale Universitaire Vaudois
  - Lausanne, Switzerland
  - 41-21-314-0150
  - Michael Montemurro, MD

---

**Nilotinib**

*Treatment of Patients With Metastatic or Unresectable Gastrointestinal Stromal Tumors in First Line With Nilotinib. (OPEN)*

- **Phase:** 2
- **Stage:** First-line
- **Conditions:** Gastrointestinal Stromal Tumor
- **Drug Type:** KIT/PDGFRA inhibitor
- **Strategy:** Block KIT
- **NCT #:** NCT00756509
- **Contact:** Novartis Basel
  - +41 61 324 1111
- **Site name unknown, Bad Saarow**
  - Bad Saarow, Germany
- **Site name unknown, Milan**
  - Milan, Italy

---

**Sunitinib**

*Safety And Efficacy Study Of Sunitinib Malate In Chinese Patients With Imatinib Resistant Or Intolerant Malignant*

- **Phase:** 4
- **Stage:** Gleevec-resistant
- **Conditions:** Gastrointestinal Stromal Tumor
- **Drug Type:** KIT/PDGFRA inhibitor
- **Strategy:** Block KIT
- **NCT #:** NCT00793871
- **Contact:** Pfizer Oncology Clinical Trial Information Service
  - 1-877-369-9753
  - PfizerCancerTrials@emergin gmed.com
  - Pfizer CT.gov Call Center
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  - Beijing, China
- **Site name unknown Beijing 100071**
  - Beijing, China
- **Site name unknown, Beijing 100021**
  - Beijing, China
- **Site name unknown, Nanjing 210002**
  - Nanjing, Jiangsu China
Sunitinib or Imatinib
Safety And Effectiveness Of Daily Dosing With Sunitinib Or Imatinib In Patients With Gastrointestinal Stromal Tumors (Resistant at 400 mg)

Phase: 3
Stage: Gleevec-resistant
Conditions: Gastrointestinal Stromal Tumor
Drug Type: KIT/PDGFRα inhibitor
Strategy: Block KIT

NCT #: NCT00372567
Contact: Pfizer Oncology Clinical Trial Information Service
1-877-369-9753
PfizerCancerTrials@emergin gmed.com
1-800-718-1021

Site name unknown, Marseille, France 13385
Marseille, France

Site name unknown, Goettingen 37075
Goettingen, Germany

Site name unknown, Hamburg 22767
Hamburg, Germany

Southwest German Cancer Center at Eberhard-Karls University
Tuebingen, Germany
49-707-1298-2127
joerg.hartmann@med.uni- tuebingen.de
Joerg T. Hartmann, MD

Site name unknown, Hong Kong, 0
Hong Kong, Hong Kong

Site name unknown, Lai Chi Kok 0
Lai Chi Kok, Kowloon Hong Kong SAR

Site name unknown, Tuen Mun 0
Tuen Mun, New Territories Hong Kong SAR

Site name unknown, Bologna 40138
Bologna, Italy

Istituto Nazionale Dei Tumori
Milan, Italy
Paolo Casali MD

Site name unknown, San Giovanni Rotondo 71013
San Giovanni Rotondo, Foggia Italy

Site name unknown, Seoul 135-710
Seoul, Republic of Korea

Site name unknown, Seoul 138-736
Seoul, Republic of Korea

Site name unknown, Seoul 110-744
Seoul, Republic of Korea

Site name unknown, Barcelona 08036
Barcelona, Spain

Site name unknown, Valencia 46009
Valencia, Spain

Site name unknown, Glasgow G12 0YH
Glasgow, UK

Royal Marsden Hospital
London, UK

Site name unknown, London NW1 2PG
London, UK

Site name unknown, London W1
London, UK

Christie Hospital NHS Trust
Manchester, Lancashire UK

Karmanos Cancer Institute
Detroit, MI USA
all (800) KARMANOS (+1 -800-527-6266) or e-mail info@karmanos.org
Anthony Shields, MD

Site name unknown, Farmington Hills 48334
Farmington Hills, MI USA

Site name unknown, Henderson 89074
Henderson, NV USA

Site name unknown, Las Vegas 89102
Las Vegas, NV USA

Site name unknown, Las Vegas 89106
Las Vegas, NV USA

Site name unknown, Las Vegas 89148
Las Vegas, NV USA

Cleveland Clinic Taussig Cancer Center
Cleveland, OH USA

Fox Chase Cancer Center
Philadelphia, PA USA
1-888-FOX-CHASE
Margaret von Mehren, M.D.

BIIB021 (CNF2024)
An Open-Label, 18FDG-PET Pharmacodynamic Assessment of the Effect of BIIB021 in Subjects With Gastrointestinal Stromal Tumors

Phase: 2
Stage: Gleevec-resistant
Conditions: Gastrointestinal Stromal Tumor
Drug Type: HSP90 inhibitor
Strategy: Destroy KIT

NCT #: NCT00618319
Contact: Biogen Idec oncologyclinicaltrials@bioge nidec.com

Site name unknown, Rochester
Rochester, MN USA

Memorial Sloan-Kettering Cancer Center
New York, NY USA
Robert Maki, MD
### Nilotinib

**Nilotinib in Advanced GIST**

<table>
<thead>
<tr>
<th>Phase</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage</td>
<td>Gleevec-resistant</td>
</tr>
<tr>
<td>Conditions</td>
<td>Gastrointestinal Stromal Tumor</td>
</tr>
<tr>
<td>Drug Type</td>
<td>KIT/PDGFRA inhibitor</td>
</tr>
<tr>
<td>Strategy:</td>
<td>Block KIT</td>
</tr>
<tr>
<td>NCT #:</td>
<td>NCT00782834</td>
</tr>
<tr>
<td>Contact:</td>
<td>See site contact info below</td>
</tr>
</tbody>
</table>

**Nilotinib**

**Phase II Study Aiming to Evaluate the Efficacy and Safety of Nilotinib Patients With Gastrointestinal Stromal Tumors (GIST) Resistant or Phase: 2

**Conditions:** Gastrointestinal Stromal Tumor

**Drugs Type:** KIT/PDGFRA inhibitor

**Strategy:** Block KIT

**Contact:** Novartis Basel

**Site name unknown, Tel Aviv**

**Site name unknown, Tel Hashomer**

---

### Sorafenib (Nexavar, BAY 43-9006)

**Sorafenib in Treating Patients With Malignant Gastrointestinal Stromal Tumor That Progressed During or After Previous Treatment With**

<table>
<thead>
<tr>
<th>Phase</th>
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</thead>
<tbody>
<tr>
<td>Stage</td>
<td>Gleevec-resistant</td>
</tr>
<tr>
<td>Conditions</td>
<td>Gastrointestinal Stromal Tumor</td>
</tr>
<tr>
<td>Drug Type</td>
<td>KIT/PDGFRA inhibitor + VEGF inhibitor (TKI) + RAF inhibitor</td>
</tr>
<tr>
<td>Strategy:</td>
<td>Block KIT + Block KIT Signal Path</td>
</tr>
<tr>
<td>NCT #:</td>
<td>NCT00265798</td>
</tr>
<tr>
<td>Contact:</td>
<td>Clinical Trials Office - University of Chicago Cancer Research 773-834-7424</td>
</tr>
</tbody>
</table>

**University of Chicago**

Chicago, IL USA

Clinical Trials Office, 773-834-7424

Hedy Kindler, MD

---

### Imatinib + Sunitinib

**Imatinib Mesylate and Sunitinib in Treating Patients With Gastrointestinal Stromal Tumors**

<table>
<thead>
<tr>
<th>Phase</th>
<th>1</th>
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</thead>
<tbody>
<tr>
<td>Stage</td>
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</tr>
<tr>
<td>Conditions</td>
<td>Gastrointestinal Stromal Tumor</td>
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<tr>
<td>Drug Type</td>
<td>KIT/PDGFRA inhibitor</td>
</tr>
<tr>
<td>Strategy:</td>
<td>Block KIT</td>
</tr>
<tr>
<td>NCT #:</td>
<td>NCT00573404</td>
</tr>
<tr>
<td>Contact:</td>
<td>Vanderbilt-Ingram Cancer Center-Cool Springs Franklin, TN USA 615 343-4128 Jordan Berlin</td>
</tr>
</tbody>
</table>

**Vanderbilt-Ingram Cancer Center**

Nashville, TN USA 800 811-8480

Clinical Trials Office

---

### Dasatinib (BMS-354825)

**Trial of Dasatinib in Advanced Sarcomas**

<table>
<thead>
<tr>
<th>Phase</th>
<th>2</th>
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<tbody>
<tr>
<td>Stage</td>
<td>Gleevec-resistant</td>
</tr>
<tr>
<td>Conditions</td>
<td>Gastrointestinal Stromal Tumor</td>
</tr>
<tr>
<td>Drug Type</td>
<td>KIT/PDGFRA inhibitor + SRC inhibitor</td>
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<tr>
<td>Strategy:</td>
<td>Block KIT + Block KIT Signal Path</td>
</tr>
<tr>
<td>NCT #:</td>
<td>NCT00464620</td>
</tr>
<tr>
<td>Contact:</td>
<td>Kathleen Granlund <a href="mailto:kegranlund@sarctrials.org">kegranlund@sarctrials.org</a> 734-930-7607</td>
</tr>
</tbody>
</table>

**Arkansas Children’s Hospital**

Little Rock, AR USA

Bryce Warren WarrenBryceA@uams.edu

Kimo Stine

**City of Hope**

Duarte, CA USA

Neeti Arora NeetiArora@coh.org

Warren Chow, MD
Everolimus

Treatment of Patients With RAD001 Who Have Progressive Sarcoma

| Phase: | 2 |
| Stage: | Gleevec-resistant |
| Conditions: | Sarcoma |
| Drug Type: | mTOR inhibitor |
| Strategy: | Block KIT Signal Path |
| NCT #: | NCT00767819 |
| Contact: | Novartis Pharmaceuticals |

- 1 800-340-6843
- Site name unknown, Berlin
  Berlin, Germany
- Site name unknown, Dusseldorf
  Dusseldorf, Germany
- Site name unknown, Mannheim 68135
  Mannheim, Germany
- Site name unknown, Munchen
  Munchen, Germany
- Site name unknown, Milan
  Milan, Italy
**Doxorubicin + Flavopiridol**

*Doxorubicin and Flavopiridol in Treating Patients With Metastatic or Recurrent Sarcoma That Cannot Be Removed By Surgery*

| Phase: 1 |
| Stage: Gleevec-resistant |
| Conditions: Gastrointestinal Stromal Tumor |
| Drug Type: Transcription inhibitor + Chemotherapy |
| Strategy: Freeze the cell division cycle |
| NCT #: NCT00098579 |
| Contact: See site contact info below |

**Multi-bacteria vaccine (MBV)**

*A Phase 1 Study of Mixed Bacteria Vaccine (MBV) in Patients With Tumors Expressing NY-ESO-1 Antigen.*

| Phase: 1 |
| Stage: Gleevec-resistant |
| Conditions: Gastrointestinal Stromal Tumor |
| Drug Type: Immune stimulate |
| Strategy: Stimulate the immune system |
| NCT #: NCT00623831 |
| Contact: See site contact info below |

**Imatinib + IL-2**

*Imatinib + IL-2*

| Phase: 1 |
| Stage: Gleevec-resistant |
| Conditions: Gastrointestinal Stromal Tumor |
| Drug Type: KIT inhibitor + Immune stimulate |
| Strategy: Block KIT + Stimulate the immune system |
| NCT #: NCT00907205 |
| Contact: See site contact info below |

**SF1126**

*A Phase I Open Label, Safety, Pharmacokinetic and Pharmacodynamic Dose Escalation Study in SF1126, a PI Kinase (PI3K)*

| Phase: 1 |
| Stage: Gleevec-resistant |
| Conditions: Solid Tumors |
| Drug Type: PI3K inhibitor |
| Strategy: Block KIT Signal Path |
| NCT #: NCT00907205 |
| Contact: See site contact info below |

**AUY922**

*Phase I-II Study to Determine the Maximum Tolerated Dose (MTD) of AUY922 in Advanced Solid Malignancies, and Efficacy in HER2*

| Phase: 1 |
| Stage: Gleevec-resistant |
| Conditions: Solid Tumors |
| Drug Type: HSP90 inhibitor |
| Strategy: Destroy KIT |
| NCT #: NCT00526045 |
| Contact: Novartis Pharmaceuticals 1 800 340-6843 |

**11**
### BGT226
**A Phase I/II Study of BGT226 in Adult Patients With Advanced Solid Malignancies Including Patients With Advanced Breast Cancer**

<table>
<thead>
<tr>
<th>Phase</th>
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<tbody>
<tr>
<td>Stage</td>
<td>Gleevec-resistant</td>
</tr>
<tr>
<td>Conditions</td>
<td>Solid Tumors</td>
</tr>
<tr>
<td>Drug Type</td>
<td>mTOR inhibitor, PI3K inhibitor</td>
</tr>
<tr>
<td>Strategy</td>
<td>Block KIT Signal Path</td>
</tr>
<tr>
<td>NCT #:</td>
<td>NCT00600275</td>
</tr>
<tr>
<td>Contact</td>
<td>Novartis 800 340-6843</td>
</tr>
<tr>
<td></td>
<td>Princess Margaret Hospital Toronto, ON Canada Lillian Siu, M.D.</td>
</tr>
<tr>
<td></td>
<td>Hospital Vall d’Hebron Barcelona, Spain</td>
</tr>
</tbody>
</table>

### MP470
**Safety Study to Determine the Maximum Tolerated Dose, Pharmacokinetics and Pharmacodynamics of Oral MP470,**

<table>
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<th>Phase</th>
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<tbody>
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<tr>
<td>Conditions</td>
<td>Solid Tumors</td>
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<tr>
<td>Drug Type</td>
<td>KIT/PDGFRα inhibitor</td>
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<tr>
<td>Strategy</td>
<td>Block KIT</td>
</tr>
<tr>
<td>NCT #:</td>
<td>NCT00894894</td>
</tr>
<tr>
<td>Contact</td>
<td>SuperGen Gil Fine, PhD 925-560-0100 <a href="mailto:gfine@supergen.com">gfine@supergen.com</a> Angelique Mittan, CLS 925-560-0100</td>
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### SNX-5422
**SNX-5422 in Treating Patients With Solid Tumor or Lymphoma That Has Not Responded to Treatment**

<table>
<thead>
<tr>
<th>Phase</th>
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</thead>
<tbody>
<tr>
<td>Stage</td>
<td>Gleevec-resistant</td>
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<tr>
<td>Conditions</td>
<td>Solid Tumors</td>
</tr>
<tr>
<td>Drug Type</td>
<td>HSP90 inhibitor</td>
</tr>
<tr>
<td>Strategy</td>
<td>Destroy KIT</td>
</tr>
<tr>
<td>NCT #:</td>
<td>NCT00644072</td>
</tr>
<tr>
<td>Contact</td>
<td>Warren Grant Magnuson Clinical Center Bethesda, MD USA Clinical Trials Office 888-NCI-1937 Giuseppe Giaccone, MD, PhD</td>
</tr>
</tbody>
</table>

### Vorinostat + Bortezomib
**Vorinostat and Bortezomib in Treating Patients With Metastatic or Unresectable Solid Tumors**

<table>
<thead>
<tr>
<th>Phase</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Stage</td>
<td>Gleevec-resistant</td>
</tr>
<tr>
<td>Conditions</td>
<td>Solid Tumors</td>
</tr>
<tr>
<td>Drug Type</td>
<td>HDAC inhibitor + Proteasome inhibitor</td>
</tr>
<tr>
<td>Strategy</td>
<td>Inhibit protein translation + Unblock cell death genes</td>
</tr>
<tr>
<td>NCT #:</td>
<td>NCT00227513</td>
</tr>
<tr>
<td>Contact</td>
<td>TGen Clinical Research Services Scottsdale, AZ USA Clinical Trials Office 608-262-5223 George Wilding, MD</td>
</tr>
</tbody>
</table>
### AMG 479 + AMG 655
AMG 655 in Combination With AMG 479 in Advanced, Refractory Solid Tumors

- **Phase:** 2
- **Stage:** Gleevec-resistant
- **Conditions:** Solid Tumors
- **Drug Type:** IGF1R inhibitor + DR5 Inhibitor
- **Strategy:** Block related tumor signal paths
- **NCT #:** NCT00819169
- **Contact:** Amgen Call Center 866-572-6436

Site name unknown, Barcelona 08036
Barcelona, Spain

Site name unknown, Santa Monica 90403
Santa Monica, CA USA

University of Chicago
Chicago, IL USA
Clinical Trials Office, 773-834-7424
Hedy Kindler, MD

Site name unknown, Indianapolis
Indianapolis, IN USA

Site name unknown, Detroit
Detroit, MI USA

### AT13387
Phase I Study of HSP90 inhibitor AT13387 in solid tumors

- **Phase:** 1
- **Stage:** Gleevec-resistant
- **Conditions:** Solid Tumors
- **Drug Type:** HSP90 inhibitor
- **Strategy:** Destroy KIT
- **NCT #:** NCT00878423
- **Contact:** Andrew Wolanski 617-632-6623
Andrew_Wolanski@dfci.harvard.edu

Beth Israel Deaconess Medical Center
Boston, MA USA
Sue Goethardt RN, OCN (617) 632-9272
Bruce Dezube M.D.

Massachusetts General Hospital
Boston, MA USA
Eunice Kwak, MD

Dana Farber Cancer Institute
Boston, MA USA
Geoffrey Shapiro, MD, PhD

Narragansett Hospital
Narragansett, RI USA

### BEZ235
A Phase I/II Study of BEZ235 in Patients With Advanced Solid Malignancies Enriched by Patients With Advanced Breast Cancer

- **Phase:** 1
- **Stage:** Gleevec-resistant
- **Conditions:** Solid Tumors
- **Drug Type:** mTOR inhibitor
- **Strategy:** Block KIT Signal Path
- **NCT #:** NCT00620594
- **Contact:** Novartis 862-778-8300

Nevada Cancer Institute
Las Vegas, NV USA
Dianna Tercan (702) 822-5483
Wolfram Samlowski, M.D.

Sarah Cannon Research Institute
Nashville, TN USA
615-329-7274
hburriss@tnonc.com
Howard A. Burris, III MD

### BIIB021 (CNF2024)
Once or Twice Daily Administration of BIIB021 to Subjects With Advanced Solid Tumors

- **Phase:** 1
- **Stage:** Gleevec-resistant
- **Conditions:** Solid Tumors
- **Drug Type:** HSP90 inhibitor
- **Strategy:** Destroy KIT
- **NCT #:** NCT00618735
- **Contact:** Biogen Idec oncologyclinicaltrials@biogenidec.com

Premier Oncology, Santa Monica
Santa Monica, CA USA

South Texas Accelerated Research Therapeutics (START)
San Antonio, TX USA

### BAY 73-4506
Phase I study of BAY 73-4506

- **Phase:** 1
- **Stage:** Gleevec-resistant
- **Conditions:** Solid Tumors
- **Drug Type:** KIT/PDGFRα inhibitor VEGFR inhibitor (TKI)
- **Strategy:** Block KIT
- **NCT #:** See site contact info below
- **Contact:** See site contact info below

MD Anderson Cancer Center
Houston, TX USA
Clinical Trials Office 713-792-3245
Jon Trent, MD, PhD

South Texas Accelerated Research Therapeutics (START)
San Antonio, TX USA
Tracy Dufresne, RN 210-593-5265
tracy.dufresne@start.stoh.com

Site name unknown, Indianapolis
Indianapolis, IN USA

Site name unknown, Detroit
Detroit, MI USA

13
### BIIB022
**Phase I Study of BIIB022 (Anti-IGF-1R Monoclonal Antibody) in Relapsed/Refractory Solid Tumors**

| Phase: | 1 |
| Stage: | Gleevec-resistant |
| Conditions: | Solid Tumors |
| Drug Type: | IGF1R inhibitor |
| Strategy: | Block related tumor signal paths |
| NCT #: | NCT00555724 |
| Contact: | Biogen Idec oncologyclinicaltrials@biogenidec.com |
| Site name unknown, Los Angeles, CA | Los Angeles, CA, USA |
| University of Colorado | Aurora, CO, USA |
| Sarah Eppers | 720-848-0052 |
| SARAH. | EPPERS@ucdenver.edu |
| Stephen Leong | |
| Fox Chase Cancer Center | Philadelphia, PA, USA |
| Kathleen Lear, RN, OCN | 215-214-1511 |
| Email: kathleen.lear@fccc.edu | Roger Cohen, MD |

### BMS-754807
**Multiple Dose Study In Cancer Patients: Safety and Tolerability of BMS-754807 in Advanced or Metastatic Solid Tumors**

| Phase: | 1 |
| Stage: | Gleevec-resistant |
| Conditions: | Solid Tumors |
| Drug Type: | IGF1R inhibitor |
| Strategy: | Block related tumor signal paths |
| NCT #: | NCT00569036 |
| Contact: | For site information outside the USA please email: Clinical. Trials@bms.com |
| Site name unknown, East Melbourne | East Melbourne, Australia |
| Site # 003 | |
| Site name unknown, Footscray, Australia | Footscray, Victoria Australia |
| Site # 004 | |
| Site name unknown, Heidelberg Australia | Heidelberg, Victoria Australia |
| Site # 002 | |
| Site name unknown, Parkville, Australia | Parkville, Victoria Australia |
| Site #001 | |

### BKM120
**A Phase IA, Multi-Center, Open-Label, Dose- Escalation Study of BKM120, Administered Orally on a Continuous Daily Dosing Schedule**

| Phase: | 1 |
| Stage: | Gleevec-resistant |
| Conditions: | Solid Tumors |
| Drug Type: | PI3K inhibitor |
| Strategy: | Block KIT Signal Path |
| NCT #: | |
| Contact: | See site contact info below |
| Sarah Cannon Research Institute | Nashville, TN, USA |
| 615-329-SCRI (7274) | |

### GDC-0941
**A Study of GDC-0941 in Patients With Locally Advanced or Metastatic Solid Tumors for Which Standard Therapy Either Does Not Exist or**

| Phase: | 1 |
| Stage: | Gleevec-resistant |
| Conditions: | Solid Tumors |
| Drug Type: | PI3K inhibitor |
| Strategy: | Block KIT Signal Path |
| NCT #: | NCT00876109 |
| Contact: | See site contact info below |
| TGen Clinical Research Services | Scottsdale, AZ, USA |
| Lynne Hull | 480-323-1071 |
| LHull@SHC.org | Daniel D. Hoff, MD |
| Dana Farber Cancer Institute | Boston, MA, USA |
| Melissa Hohos | 617 632-2201 |
| mhohos@partners.org | George Demetri, MD, PhD |
| Karmanos Cancer Institute | Detroit, MI, USA |
| Jie Zhang | 313-576-9365 |
| zhangej@karmanos.org | |
| Royal Marsden Hospital | London, UK |
| Krunal Shah | 0208 722 4005 |
| Krunal.Shah@icr.ac.uk | |

---
### IMC-A12 + CCI-779

**Cixutumumab and Temsirolimus in Treating Young Patients With Solid Tumors That Have Recurred or Not Responded to Treatment**

| Phase: | 1 |
| Stage: | Gleevec-resistant |
| Conditions: | Solid Tumors |
| Drug Type: | IGF1R inhibitor + mTOR Inhibitor |
| Strategy: | Block related tumor signal paths |
| NCT #: | NCT00880282 |
| Contact: |  |

**Children's Hospital of Orange County**  
Orange, CA USA  
Violet Shen  
714-532-8636

**Children's National Medical Center**  
Washington, DC USA  
Clinical Trials Office  
202-884-2549

**Masonic Cancer Center at University of Minnesota**  
Minneapolis, MN USA  
Clinical Trials Office  
612-624-2620

**Cincinnati Children's Hospital Medical Center**  
Cincinnati, OH USA  
Clinical Trials Office  
513-636-2799

---

### IMC-A12 + CCI-779

**IMC-A12 in Combination With Temsirolimus (CCI-779) in Patients With Advanced Cancers**

| Phase: | 1 |
| Stage: | Gleevec-resistant |
| Conditions: | Solid Tumors |
| Drug Type: | IGF1R inhibitor + mTOR Inhibitor |
| Strategy: | Block related tumor signal paths |
| NCT #: | NCT010678769 |
| Contact: | Aung Naing, MD  
713-563-0181 |

**Karmanos Cancer Institute**  
Detroit, MI USA  
all (800) KARMANOS (1-800-527-6260) or e-mail info@karmanos.org.

**MD Anderson Cancer Center**  
Houston, TX USA  
713-563-0181  
Aung Naing, MD

---

### IMC-A12 + CCI-779

**Monoclonal Antibody IMC-A12 and Temsirolimus in Treating Patients With Locally Advanced or Metastatic Cancer**

| Phase: | 1 |
| Stage: | Gleevec-resistant |
| Conditions: | Solid Tumors |
| Drug Type: | IGF1R inhibitor + mTOR Inhibitor |
| Strategy: | Block related tumor signal paths |
| NCT #: | NCT010678223 |
| Contact: |  |

**MD Anderson Cancer Center**  
Houston, TX USA  
Clinical Trials Office - M.D. Anderson Cancer Center,  
713-792-3245  
Aung Naing, MD

---

### IPI-493

**A Phase I Dose Escalation Study of IPI-493**

| Phase: | 1 |
| Stage: | Gleevec-resistant |
| Conditions: | Solid Tumors |
| Drug Type: | HSP90 inhibitor |
| Strategy: | Destroy KIT |
| NCT #: | NCT00724425 |
| Contact: | See site contact info below |

**Premier Oncology, Scottsdale**  
Scottsdale, AZ USA  
Patricia Shannon, RN  
480 860-5000 xt 223  
pshannon@premiereoncology.com  
David Mendelson, M.D.

**San Diego Pacific Oncology and Hematology Associates**  
Encinitas, CA USA  
Karen Brady, RN MSN  
760-752-3340  
kbrady@premiereoncology.com  
Richard Just, M.D.

**Premier Oncology, Santa Monica**  
Santa Monica, CA USA  
Marilyn Mulay, NP  
310-633-8400  
mmulay@premiereoncology.com  
Lee Rosen M.D.

**University of Colorado**  
Aurora, CO USA  
Stacy Grolnic, RN  
720-848-0655  
stacy.grolnic@uchsc.edu  
Colin Weekes, MD, PhD

**Mary Crowley Medical Research Center (Central Office)**  
Dallas, TX USA  
Kay Easterwood-Sanchez  
214-658-1943  
Neil Senzer, MD
KW2450  
Safety Study to Evaluate KW-2450 in Subjects With Advanced Solid Tumor

Phase: 1  
Stage: Gleevec-resistant  
Conditions: Solid Tumors  
Drug Type: IGF1R inhibitor  
Strategy: Block related tumor signal paths  
NCT #: NCT00921336  
Contact: Danyel Davis  
(609) 919-1100  
ddavis@kyowa-kirin-pharma.com  
Niranjan Rao  
(609) 919-1100  
nrao@kyowa-kirin-pharma.com  
Memorial Sloan-Kettering Cancer Center  
New York, NY USA

MEDI-573  
A Dose-Escalation Study to Evaluate the Safety, Tolerability, and Antitumor Activity of MEDI-573 in Subjects With Advanced Solid Tumor

Phase: 1  
Stage: Gleevec-resistant  
Conditions: Solid Tumors  
Drug Type: IGF1R inhibitor  
Strategy: Block related tumor signal paths  
NCT #: NCT00816361  
Contact: Jill Schmidt  
301-398-0000  
schmidtj@medimmune.com  
Lorena DeRienzo  
301-398-0000  
de-rienzol@medimmune.com  
Mayo Clinic, Jacksonville  
Jacksonville, FL USA  
Michele Maharaj  
904-953-6136  
maharaj.michele@mayo.edu  
Michael E. Menefee, MD

OSI-906  
Phase 1 Study of Continuous OSI -906 Dosing

Phase: 1  
Stage: Gleevec-resistant  
Conditions: Solid Tumors  
Drug Type: IGF1R inhibitor  
Strategy: Block related tumor signal paths  
NCT #: NCT00514007  
Contact: OSIP Medical Information  
800.572.1932 x7821  
medical-information@osip.com  
Beatson West of Scotland Cancer Centre  
Glasgow, UK

PX-478  
Phase 1 Trial of PX-478

Phase: 1  
Stage: Gleevec-resistant  
Conditions: Solid Tumors  
Drug Type: HIF-1α inhibitor  
Strategy: Block related tumor signal paths  
Block tumor blood vessel  
NCT #: NCT00522652  
Contact: See site contact info below  
TGen Clinical Research Services  
Scottsdale, AZ USA  
Lynne Hull  
480-323-1071  
lhull@shc.org  
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Houston, TX USA  
Hala Abdulkadir  
713-792-9944  
habdulk@mdanderson.org  
Roy S. Herbst, PhD
**PX-866**

*Phase I Trial of Oral PX-866*

**Phase:** 1  
**Stage:** Gleevec-resistant  
**Conditions:** Solid Tumors  
**Drug Type:** PI3K inhibitor  
**Strategy:** Block KIT Signal Path  
**NCT #:** NCT00726583  
**Contact:** See site contact info below

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Roy Herbst, MD

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**R1507**

*A Multiple Ascending Dose Study of R1507 in Children and Adolescents With Advanced Solid Tumors*

**Phase:** 1  
**Stage:** Gleevec-resistant  
**Conditions:** Solid Tumors  
**Drug Type:** IGF1R inhibitor  
**Strategy:** Block related tumor signal paths  
**NCT #:** NCT00560144  
**Contact:** Hoffmann-La Roche  
Please reference Study ID Number: NO21200  
973-235-5000  
800-526-6367 (US only)  
**Site name unknown,**  
**Denver 80218**  
Denver, CO USA

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**University of Pennsylvania**  
Philadelphia, PA USA  
**MD Anderson Cancer Center**  
Houston, TX USA  
800-392-1611 Patients  
800-392-1611 Referring MD  
Cynthia E. Herzog

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**SNX-5422**

*Safety Study Of SNX-5422 To Treat Solid Tumor Cancers And Lymphomas*

**Phase:** 1  
**Stage:** Gleevec-resistant  
**Conditions:** Solid Tumors  
**Drug Type:** HSP90 inhibitor  
**Strategy:** Destroy KIT  
**NCT #:** NCT00647764  
**Contact:** Pfizer Oncology Clinical Trial Information Service  
1-877-369-9753  
PfizerCancerTrials@emerginmed.com  
Pfizer CT.gov Call Center  
1-800-718-1021  
**Site name unknown,**  
**Bethesda 20982**  
Bethesda, MD USA

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**SNX-5422**

*Safety and Pharmacology of SNX-5422 Mesylate in Subjects With Refractory Solid Tumor Malignancies*

**Phase:** 1  
**Stage:** Gleevec-resistant  
**Conditions:** Solid Tumors  
**Drug Type:** HSP90 inhibitor  
**Strategy:** Destroy KIT  
**NCT #:** NCT00506805  
**Contact:** Pfizer Oncology Clinical Trial Information  
1-877-369-9753  
PfizerCancerTrials@emerginmed.com  
Pfizer CT.gov Call Center  
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David Ross Camidge MD

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**Sorafenib + Vorinostat**

*Phase I Vorinostat + Sorafenib in Patients With Advanced Solid Tumors*

**Phase:** 1  
**Stage:** Gleevec-resistant  
**Conditions:** Solid Tumors  
**Drug Type:** HDAC inhibitor + KIT/PDGFRA inhibitor  
**Strategy:** Block KIT + Unblock cell death genes + Destroy KIT  
**NCT #:** NCT00635791  
**Contact:** See site contact info below

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**Site name unknown,**  
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Bethesda, MD USA

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**Memorial Sloan-Kettering Cancer Center**  
New York, NY USA  
212-639-8267  
Dr. Tanya Trippett
STA-9090
Study of STA-9090, Administered Once-Weekly in Patients With Solid Tumors

| Phase: | 1 |
| Stage: | Gleevec-resistant |
| Conditions: | Solid Tumors |
| Drug Type: | HSP90 inhibitor |
| Strategy: | Destroy KIT |
| NCT #: | NCT00687934 |
| Contact: | See site contact info below |

Premier Oncology, Santa Monica
Santa Monica, CA USA
310-633-8400
Lee Rosen, MD

US Oncology - Dayton Oncology & Hematology
Kettering, OH USA
robert.raju@usanoncology.com
(937)293-1622
Robert Raju, MD

STA-9090
Study of STA-9090, Administered Twice-Weekly in Patients With Solid Tumors

| Phase: | 1 |
| Stage: | Gleevec-resistant |
| Conditions: | Solid Tumors |
| Drug Type: | HSP90 inhibitor |
| Strategy: | Destroy KIT |
| NCT #: | NCT00688116 |
| Contact: | See site contact info below |

EmergingMed
(877) 369-9753
PfizerCancerTrials@emergingmed.com
Pfizer CT.gov Call Center
1-800-718-1021

XL147
Study of the Safety and Pharmacokinetics of XL147 in Adults With Solid Tumors

| Phase: | 1 |
| Stage: | Gleevec-resistant |
| Conditions: | Solid Tumors |
| Drug Type: | PI3K inhibitor |
| Strategy: | Block KIT signal path |
| NCT #: | NCT00486135 |
| Contact: | Exelixis Contact Line
866-939-4041 |

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Jose Baselga, MD, PhD

Mary Crowley Medical Research Center (Baylor)
Dallas, TX USA
J.R. Dolan
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Gerald Edelman MD, PhD

XL228
Study of XL228 Administered Intravenously to Subjects With Advanced Malignancies

| Phase: | 1 |
| Stage: | Gleevec-resistant |
| Conditions: | Solid Tumors |
| Drug Type: | IGF1R inhibitor |
| Strategy: | Block related tumor signal paths |
| NCT #: | NCT00526838 |
| Contact: | Exelixis Contact Line
1-866-939-4041 |

University of Michigan
Ann Arbor, MI USA
Nabeela Iqbal
734-232-0759
David Smith, MD
### Study of the Safety and Pharmacokinetics of XL765 in Adults With Solid Tumors

**Duke University**  
Durham, NC USA  
Sharon Norman  
919-681-5257  
Herb Horowitz, MD

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**XL765**

Study of the Safety and Pharmacokinetics of XL765 in Adults With Solid Tumors

| Phase | 1
| Stage | Palliative
| Conditions | Gastrointestinal Stromal Tumor
| Drug Type | mTOR inhibitor
| Strategy | Block related tumor signal paths
| NCT #: | NCT00485719
| Contact | Exelixis Contact Line 866-939-4041

#### Radiation Therapy as Palliative Treatment of GIST (GIST-RT)

- **Phase:** 1  
- **Stage:** Palliative  
- **Conditions:** Gastrointestinal Stromal Tumor  
- **Drug Type:** None  
- **Strategy:** Radiation  
- **NCT #:** NCT00515931  
- **Contact:** Exelixis Contact Line 866-939-4041

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- **Karmanos Cancer Institute**  
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  Theresa Laeder 313-576-9386  
  Patricia Lo Russo, DO

- **South Texas Accelerated Research Therapeutics (START)**  
  San Antonio, TX USA  
  Gina Mangold, MBA 210-413-3594  
  gmangold@start.stoh.com  
  Kyriakos Papadopoulos, MD

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### Imatinib

A phase III randomized study evaluating surgery of residual disease in patients with metastatic gastro-intestinal stromal tumor

| Phase | 3  
| Stage | Stable Disease  
| Conditions | Gastrointestinal Stromal Tumor  
| Drug Type | KIT/PDGFRA inhibitor  
| Strategy | Block KIT  
| NCT #: | See site contact info below  
| Contact | Anne Kirkpatrick  
  Project Manager - EORTC, Brussels, Belgium  
  anne.kirkpatrick@eortc.be  
  +32 2 7741691

- **Helsinki University Central Hospital**  
  Helsinki, Finland  
  Heikki Joensuu, MD  
  heikki.joensuu@hus.fi

- **Mount Sinai School of Medicine**  
  New York, NY USA  
  Johnny Kao, MD  
  johnny.kao@mountsinai.org

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### Sunitinib + Radiation

Sutent and Radiation as Treatment for Limited Extent Metastatic Cancer

| Phase | 2  
| Stage | Palliative  
| Conditions | Any type of Cancer  
| Drug Type | KIT/PDGFR inhibitor  
| Strategy | Block KIT  
| NCT #: | NCT00463060

- **Netherlands Cancer Institute - Antoni van Leeuwenhoek Hospital**  
  Amsterdam, Netherlands

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  gmangold@start.stoh.com  
  Kyriakos Papadopoulos, MD