Searching for Products

Merck & Co., Inc.

Margaret Beer
Director, Scientific Liaison
Forward-Looking Statement

This presentation contains "forward-looking statements" as that term is defined in the Private Securities Litigation Reform Act of 1995. These statements are based on management’s current expectations and involve risks and uncertainties, which may cause results to differ materially from those set forth in the statements. The forward-looking statements may include statements regarding product development, product potential or financial performance. No forward-looking statement can be guaranteed, and actual results may differ materially from those projected. Merck undertakes no obligation to publicly update any forward-looking statement, whether as a result of new information, future events, or otherwise. Forward-looking statements in this presentation should be evaluated together with the many uncertainties that affect Merck’s business, particularly those mentioned in the cautionary statements in Item 1 of Merck’s Form 10-K for the year ended December 31, 2005, and in its periodic reports on Form 10-Q and Form 8-K, which the company incorporates by reference.
• **Why** is in-licensing essential to big Pharma?
• **How** - Merck’s approach to in-licensing – “Embracing Partnerships”
• How to Capture Big Pharma’s Attention with Your Opportunity
• A success story - Oncology
Drug Discovery is High Risk

Source: Based on PhRMA analysis, updated for data per Tufts Center for the Study of Drug Development (CSDD) database.

(Estimated cost > $800 million discovery to launch)

Source: MERCK & CO., INC.
Merck’s Research and Development Strategy

• Ensure a strong internal research capability and leverage it with the best external science

Internal R&D

- Early research programs
- Enabling/Platform technologies
- Formulations/Drug delivery
- Product candidates

- Accelerate research
- Broaden pipeline
- Enlarge current franchises
Collaboration Creates Value

Combining our Strengths
Sharing our Successes

Biotech Industry
- Discovery
- Innovation
- Subject Matter expertise

Merck
- Novel technology application
- Development
- Commercialization expertise
- Subject Matter expertise
Merck’s research and development strategy – embracing partnerships

Alliances with external partners are an integral and essential part of our long-term business and research strategy

• Ensure a strong internal research capability
• Leverage this capability through collaborations
• Openly collaborate with partners
• Continually evaluate potential transactions
  – From platform technologies to late-stage product opportunities
  – In a coordinated approach across the company

Combining Internal Expertise and External Innovation
Worldwide Licensing and External Research

- Mr. Richard Kender
  VP Corporate & Business Development

- Ms. Barbara Yanni
  VP and Chief Licensing Officer

- Dr. Mervyn Turner
  Sr. VP, WW Licensing & Ext. Research

- Dr. Greg Wiederrecht
  VP and Head, Ext. Scientific Affairs

- Mr. Jim Philipson
  VP Alliance Management

- Information Group

- Relationship Development

- Transaction Managers

- Scientific Liaisons

- External Research Scouts
  Europe, Boston, San Diego, Japan, Australia, China
Our process - overview

Opportunity Initiation (Find and Select) → Doing the Deal (Negotiate) → Alliance Management (Implement)
Step 1: Opportunity initiation

- Worldwide scouts seek out opportunities
- Non-confidential information submitted
- Initial non-confidential review by monthly Review & Licensing Committees
- Confidential disclosure agreement signed
- Confidential review of data
- Face-to-face scientific meetings
- Approval by scientific committee
Step 2: Doing the deal

- Transaction Manager assigned
- Term sheet negotiations conducted
- Due diligence
- Licensing Management Committee approval
- Definitive agreements negotiated
- Agreements executed
Step 3: Alliance Management - caring about you

- Merck is committed to ensuring our partnerships succeed and flourish
- Alliance Management supports this goal by:
  - Creating added value across life-cycle of partnership
  - Providing partners with a clear and enriching channel of communication
  - Providing Merck management with a center of expertise to share best practices and learn from our partners

*Signing the deal is only the first step*
Promotional Execution:
Planned Promotional Roll-Out for 2004-2005

- Advertorial and Journal Ad
- 12 Page Brochure
- Enhanced Website
- Exhibit Booths
- External Presentations
- Messages in Press Releases

Once branding is complete, all promotion will be integrated.

Ono Pharmaceutical Co., Ltd. Signs Agreement Granting Merck & Co., Inc. Worldwide License for the Injectable Formulation of ONO-2506 ((R)-(-)-2-propyloctanoic acid), a Novel Compound for Stroke

OSAKA, JAPAN and WHITEHOUSE STATION, N.J., Nov. 10, 2004 - Ono Pharmaceutical Co., Ltd. and Merck & Co., Inc. today announced that they have signed an agreement granting Merck the worldwide license for ONO-2506 ((R)-(-)-2-propyloctanoic acid), a novel intravenous compound currently in Phase II development for the treatment of acute stroke.  Stroke is a leading global killer and major cause of severe disability.

"We are delighted to be partnering with Ono, which has an outstanding record in Japan for discovering and commercializing innovative medicines," said David W. Anstice, president of Human Health for Merck, whose responsibilities include Japan.  "Merck recognizes the valuable scientific medical achievements being made in Japan today and is committed to working with Ono to bring the benefits of their research to patients globally."

Under the terms of the agreement, Ono will receive an initial payment and milestone payments in addition to royalties on net sales.  Additional financial terms were not disclosed.

In addition, Ono will receive exclusive rights in Japan to develop and market EMEND (aprepitant), Merck’s drug for use in combination with other antiemetic agents for prevention of acute and delayed nausea and vomiting associated with initial and repeat courses of highly emetogenic cancer chemotherapy, including cisplatin.  Ono also receives rights in Japan to co-market a second brand of MK-431, Merck’s investigational oral compound for the treatment of diabetes, under a yet to be determined trademark.

Ono retains rights to the injectable formulation of ONO-2506 in Japan, Korea and Taiwan.  Ono also retains worldwide rights to other formulations of ONO-2506.

Osaka-based Ono Pharmaceutical Co., Ltd. and Whitehouse Station, N.J.-based Merck & Co., Inc. today announced that they have signed an agreement granting Merck & Co., Inc. worldwide rights for a novel intravenous compound currently in Phase II development for the treatment of acute stroke.  Stroke is a leading global killer and major cause of severe disability.

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Regional scouting function established in key locations

- Senior level Merck scientists
- Build close relationships with local scientific community (companies, academia, VC’s, organizations)
- Point of contact for potential partners
- Key locations established:
  - Western & Eastern Europe
  - Boston
  - New Jersey & Pennsylvania
  - San Diego
  - Japan
  - Australia
Licensing & External Research, Europe

RAY HILL
Executive Director & Head
Licensing & External Research, Europe

MARGARET BEER
Director, Scientific Liaison
Benelux, Switzerland & Southern Europe

MANFRED HORST
Director, Scientific Liaison
France, Germany & Eastern Europe

HANS BOSTRÖM
Director, Scientific Liaison
Scandinavia & The Baltic Countries

TIM SPAREY
Assoc Director, Scientific Liaison
UK, Ireland & South Africa

SHEILA SAVILL
PA/Administrator

JACKIE SCALES
PA/Administrator

TO BE APPOINTED
PA/Administrator
Sourcing opportunities

- Directed Searches
- Personal Contacts
- Territorial Presence
- Analyst Meetings
- Unsolicited Disclosures
- Literature Reviews
- Patent Searches
- Targeted Company Visits
- Scientific Meetings
- Prospecting Trips
Merck’s Research and Development Strategy: Partnering is a Key Element of Future Growth

2005 Alliances

- > 5000 Interactions
- > 4000 Opportunities reviewed
- > 600 Reviewed under a CDA
- 44 Signed

Signed
Reviewed under a CDA
Opportunities reviewed
Interactions
### Merck’s Selected Areas of Interest

#### High Priority
- Alzheimer’s Disease
- Atherosclerosis
- Cardiovascular disease
- Diabetes
- Vaccines
- Obesity
- Oncology
- Pain
- Sleep Disorders

#### Focused Interest
- Antibiotics
- Antifungal
- Antiviral (HCV, HIV)
- Asthma
- COPD
- Neurodegeneration
- Ophthalmology
- Osteoporosis
- Schizophrenia
- Stroke

#### Technology Platforms
- Biologics and Antibodies
- Drug Delivery
- Information Technologies
- Molecular Profiling / Molecular Biomarkers
- New Vaccine Technology
- Research Technologies / Drug Discovery Platforms
- In Vivo Imaging

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- In addition to the High Priority and Focused Interest areas, Merck will continue to pursue partnering opportunities in other disease areas where clinical proof of concept exists.

- Merck will also pursue partnerships in diagnostics and devices to enable our core Rx business.
# Oncology

## Areas of Interest:

### Early Stage (thru clinical POC)
- Cell signaling and apoptosis
- Cell cycle regulation
- Checkpoints
- MAbs
- Regulation of energy production and utilization in tumors
- Tumor selective chemosensitizing agents
- Signal transduction
- Vaccines
- Immunomodulators

### Late Stage Clinical or Marketed
- Therapeutic or supportive care
- Global or regional deals (US, Europe and/or Japan)
- Complements to internal pipeline and marketed products
- Novel patent-protected formulations of existing products
- Rx-Dx opportunities

## Not Interested in:

### Early Stage (through clinical POC)
- Angiogenesis, unless novel mechanism of action
- “Classic” cytotoxics
- Differentiation agents
- Gene therapy
- Hormonal agents
- Preventative care

### Late Stage Clinical or Marketed
- Preventive care
- Devices
- Diagnostics (unrelated to current pipelines)
- Gene therapy
We have developed systems to track each interaction.
Championing Discoveries Together

- As a science-driven research organization, alliances with innovative partners are an integral and essential part of our long-term business strategy
- Each external relationship receives high priority at all levels of Merck
- From basic research through phase III, IV, and beyond, we will provide world-class research, development, and regulatory resources to ensure ultimate commercial success

_Understanding the science behind cutting-edge innovations is one of our core capabilities_
How to Capture Big Pharma’s Attention with Your Opportunity
Know your Target Audience

• Research your targeted Pharma companies
• Appeal to their core values, for example Merck’s strategy focuses on:
  – Cutting-edge science
  – Novel medicines that make a difference
• Merck – innovative, flexible deals
• Demonstrate how your offering fits into their pipeline or research framework
Submit a Clear, Summarized Package

- Highlight your main points, advantages and provide summarized non-confidential scientific data
  - A concise summary is preferred
    - Define the product or technology offered
    - Define the therapeutic or area focus
    - Explain how it fits into Merck’s strategy/pipeline
  - Include written non-confidential scientific data with summary information for a preliminary scientific review
    - Some ideas: published patents, presentations, published abstracts, journal articles, etc…

We review several thousand proposals per year – a brief, clear summary will help yours stand out
Send to Appropriate Initial Contact

• Direct your information to the appropriate contact
  – Merck’s system is centralized
  – e-mail preferred
• Send your e-mail to the licensing / business development group
  – Sending information to the Chairman, CEO, or other high level individuals outside the licensing function will delay the review process

Send your proposal to
margaret_beer@merck.com
What Merck Looks For in a Licensing Candidate

- **Selectivity** against a large range of receptors, enzymes, ion channels
- **Potency** in-vitro and in-vivo
- **Mechanism** - evidence that molecule “hits the target” in animals.
  - Minimally a pharmacodymanic assay
  - Ideally a response in a validated animal model that recapitulates the human disease
- Preliminary **toxicology** data
- Oral **bioavailability** (for small molecules) and good **half-life**
- **Strong IP** position
  - On the target
  - On the molecule
Separate Yourself from the Competition

- Highlight your product’s uniqueness
- Demonstrate its position vs. current and future competitors
- Show the advantages of working with your group
Describe your IP Position

- Do you have freedom to operate?
- Does your patent estate offer exclusive coverage?
- Document your IP position
  - Filing status
  - Type (e.g., composition of matter, use)
- Strategy and plans for additional filings
Common Responses to Opportunities

• If yes, move forward to confidential assessment / meeting
• If maybe, there may be follow-up information requests
• If no, may be related to:
  – Insufficient data - too early; we will often let you know what type of data we are seeking
  – Lack of biochemical mechanism can be an issue, but not if clinical POC is achieved or if there is clear preclinical evidence of efficacy
  – Outside company’s business area (i.e. nutraceuticals)
  – Indication not of strategic interest
  – Insufficient patent protection
    • Lack of freedom to operate
    • Time remaining or territories
  – Toxicity concerns / Metabolism concerns / AEs
Conclusions

• Alliances are essential to Big Pharma’s growth
  – Big Pharma is open to your opportunity
• Provide a clear, concise scientific data package
• Highlight the advantages of your offering / IP and provide a perspective on its value within the competitive landscape
• Send your package to Licensing / Business Development
Merck is Constantly and Proactively Seeking New External Opportunities

• A well established and efficient process
  – An expert group focused on the scientific and commercial aspects of each opportunity
  – External Research Team mobilizes senior management from various disciplines
  – Highly skilled personnel in the negotiation, structure and management of alliances

• Formal review and response for every opportunity

• Review by therapeutic experts within Merck Research Laboratories and Marketing
Oncology Case Study: Partnering Has Accelerated the Growth of Our Oncology Franchise

**Preclinical**
- Agensys AGS-PSCA
- Notch Inhibitor
- Vertex VX680
- Rigel
- Pierre Fabre MK-0646
- Vaccine Inovio-EP
- Geron hTERT vaccine

**Ph I**
- Aton ZOLINZA™

**Ph II**
- GARDASIL™

**Ph III**
- Filed

**Launch**
- From alliances
- From internal programs

**Partnerships**
- Tools and Academic Relationships
  - Alnylam, NKI, Celera, RNAi, AVEO
  - (numerous unannounced)

**Internal Programs**
- Rosetta

**Early Research**