



Merck: What we Look for in a Licensing Partner

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Key Company Facts for *Today's* Merck

MERGER

In 2009, Merck and Schering-Plough merged to become a stronger, more dynamic healthcare leader. We are known as Merck in the US and Canada and everywhere else as MSD.

HEADQUARTERS

Whitehouse Station, New Jersey, U.S.A.

BUSINESSES

Pharmaceuticals, Vaccines, Biologics, Consumer Health Care and Animal Health

2010 FINANCIALS

Revenue: \$46 billion
R&D Expense: \$11 billion

GLOBAL OPERATIONS

Merck operates in more than 140 countries

EMPLOYEES

Approximately 94,000

LICENSING

In 2010, 46 significant licensing and partnership deals were executed.

Positioned to Offer Customers a Portfolio of Options in Key Therapeutic Areas

CV and Diabetes	 <i>(ezetimibe/simvastatin)</i>	 <i>(ezetimibe)</i>	 <i>(eptifibatide) Injection</i>	 <i>(sitagliptin) tablets</i>	 <i>(sitagliptin/metformin HCl) tablets</i>	
Infectious Diseases		 <i>posaconazole Oral Suspension</i>	 <i>(ertapenem sodium) IV/IM</i>	 <i>raltegravir tablets</i>	 <i>(casopfungin acetate) IV</i>	 <i>Peginterferon alfa-2b</i>
Respiratory/ Bone/ Imm/Derm	 <i>(mometasone furoate inhalation powder)</i>	 <i>(desloratadine) 5 mg</i>	 <i>(mometasone furoate monohydrate)</i>	 <i>(MONTELUKAST SODIUM)</i>		 <i>golimumab</i>
	 <i>INFLIXIMAB</i>	 <i>(alendronate sodium/cholecalciferol) tablets</i>	 <i>(finasteride)</i>	 <i>(etoricoxib, MSD)</i>		
Women's Health	 <i>(etonogestrel/ethinyl estradiol vaginal ring)</i>	 <i>(etonogestrel implant) 68 mg</i>		 <i>recombinant FSH follicleotropin beta</i>	 <i>tibolone</i>	
Neuro/ Ophthalmology	 <i>(asenapine) sublingual tablets 5 and 10 mg</i>	 <i>(tafluprost, MSD)</i>	 <i>sugammadex</i>	 <i>WIRTAPINE</i>	 <i>(rizatriptan benzoate)</i>	
Oncology	 <i>(aprepitant)</i>	 <i>(vorinostat) capsules</i>		 <i>Interferon Alfa-2b, Recombinant for Injection</i>		
Vaccines	 <i>(Rotavirus Vaccine, Live, Oral, Pentavalent)</i>	 <i>(VARICELLA VIRUS VACCINE LIVE)</i>		 <i>influenza virus vaccine</i>	 <i>(Quadrivalent Human Papillomavirus (Types 6, 11, 16, 18) Recombinant Vaccine)</i>	 <i>(Zoster Vaccine Live) (Duka/Merck)</i>
Mature/ Diversified Brands	 <i>(SIMVASTATIN)</i>	 <i>(losartan potassium tablets)</i>	 <i>(albuterol sulfate) Inhalation Aerosol</i>	 <i>Non-Drowsy</i>		

Major Launches Under Way Expected to Drive Growth

ASMANEX	Asthma	Launching in Japan, Finland, Italy
BRIDION	Anesthesia reversal	Launching in > 30 countries ex-US
◆ BRINAVESS	Atrial fibrillation	Launching in 2 EU markets
◆ DAXAS	COPD	Launching in 2 EU markets
◆ DULERA	Asthma	Launching in US
ELONVA	Fertility	Launching in EU
JANUVIA	Type 2 diabetes	Launching in Japan
REMERON	Depression	Launching in Japan
SAFLUTAN	Glaucoma	Launching in EU
SAPHRIS	Schizophrenia and bipolar I disorder	Launching in US
SIMPONI	Autoimmune diseases	Launching in 18 countries ex-US
TREDAPTIVE	Atherosclerosis	Launching in 35 countries ex-US

As of October, 2010

COMBINING OUR STRENGTHS
SHARING OUR SUCCESSES



The Potential of our Late-Stage Pipeline (Feb. 16, 2011)

Phase II	Phase II	Phase III	Phase III
Allergy, Immunotherapy 1 SCH 900237	Insomnia MK-3697	Allergy, Grass Pollen 1 SCH 697243	Glaucoma, SAFLUTAN (MK-2452) (US)
Cancer, dalotuzumab (MK-0646)	Insomnia MK-6096	Allergy, Ragweed 1 SCH 039641	Insomnia, suvorexant MK-4305
Cancer, dinaciclib (SCH 727965)	Osteoporosis MK-5442	Asthma, ZENHALE (SCH 418131) (EU)	Migraine, telcagepant (MK-0974)
Clostridium difficile Infection MK-3415A	Pediatric Vaccine V419	Atherosclerosis MK-0524A (US)	Neuromuscular blockade reversal, BRIDION (SCH 900616) (US)
Contraception, Medicated IUS, SCH 900342	Pneumoconjugate vaccine V114	Atherosclerosis MK-0524B	Osteoporosis, odanacatib (MK-0822)
COPD Navarixin, SCH 527123	Progeria Lonafarnib, (SCH 066336)	Atherosclerosis Anacetrapib, (MK-0859)	Parkinson's Disease Preladenant, (SCH 420814)
Diabetes Mellitus MK-3102	▶ Psoriasis SCH 900222	Cervical Cancer, V503 HPV vaccine (9 valent)	Sarcoma Ridaforolimus (MK-8669)
Hepatitis C Vaniprevir, (MK-7009)	Staph Infection V710	Contraception, NOMAC/E2 (SCH 900121) (US)	Thrombosis Vorapaxar (SCH 530348)
	Thrombosis, betrixaban (MK-4448)	Diabetes sitagliptin/pioglitazone (MK-0431C)	▶ Herpes Zoster Inactivated VZV vaccine V212
		Fertility, corifollitropin alfa (SCH 900962) (US)	

¹ North American rights only











▶ Moved forward since last pipeline update

Committed to Mission of Providing Innovative and Medically Important Products











- 5 New Drug Approvals in 2010, including DULERA (US), BRINAVESS (EU), DAXAS (EU), ELONVA (EU) and SYCREST (EU)
- Major New Filings in 2010, including
 - Boceprevir (US & EU) – accepted for priority review
 - Extended Release Janumet (US)
- ~100,000 patients in CV outcomes trials
 - Vorapaxar > 39,000 patients
 - Tredaptive > 25,000 patients
 - Vytorin IMPROVE-IT > 18,000 patients
 - Vytorin SHARP > 9,000 patients
 - Anacetrapib ~ 30,000 patients (planned)
- 16,000 patients in Odanacatib osteoporosis outcomes trial
- Signed 46 significant deals with external partners in 2010

Merck's Goal is To Be as Strong in the Emerging Markets as We Are Globally

Global

Rank	Company
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Emerging Markets*

Rank	Company
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Source: IMS Health, MIDAS, MAT Dec 2009

*Includes Asia Pacific, Latin America, Eastern Europe, Middle East & Africa



Merck's Portfolio is Well Suited to Meet Many of the Unmet Medical Needs in Emerging Markets

Cardiovascular Disease

23.6MM people will die from CVDs, mainly from heart disease and stroke, by 2030 – deaths in SE Asia will grow the most

50%+ increase in hypertension in China

Diabetes

75%+ of worldwide diabetic population in Emerging Markets

Vaccinations

28MM+ children per year do not receive basic vaccines



Respiratory

300MM people currently suffer from asthma. Most asthma-related deaths occur in low- and lower-middle – income countries

Infectious Disease

166 deaths per 100,000 in India (vs 23 in US) due to infectious diseases

Women's Health

Lack of access to contraceptives creates an enormous unmet medical need

SOURCE: WHO; MSD

COMBINING OUR STRENGTHS
SHARING OUR SUCCESSSES



Today's Merck...

Seeking *Innovation* internally & externally



Openness creates an environment where people and ideas can flourish and where potential is unlimited.

Merck will:

- Ensure a strong internal research capability
- Leverage this capability through collaborations
- Openly collaborate with the best partners
- Continually evaluate potential transactions

Today's Merck: **Our Global Licensing Teams Are Growing**

MRL Leadership:

- David Nicholson, SVP & Head, Worldwide Licensing/Knowledge Management
 - Gregory Wiederrecht, Vice President & Head, External Scientific Affairs
 - Meeta Chatterjee, Head, Global Out-Licensing
 - Rhonda Kaufman, Head, Regional Deals

Corporate Leadership:

- Barbara Yanni, VP and Chief Licensing Officer, Corporate Licensing

Other Licensing functions growing to meet the new demands of Merck's expanded areas of interest and opportunities to partner are:

- Alliance Management
- Regional Business Development

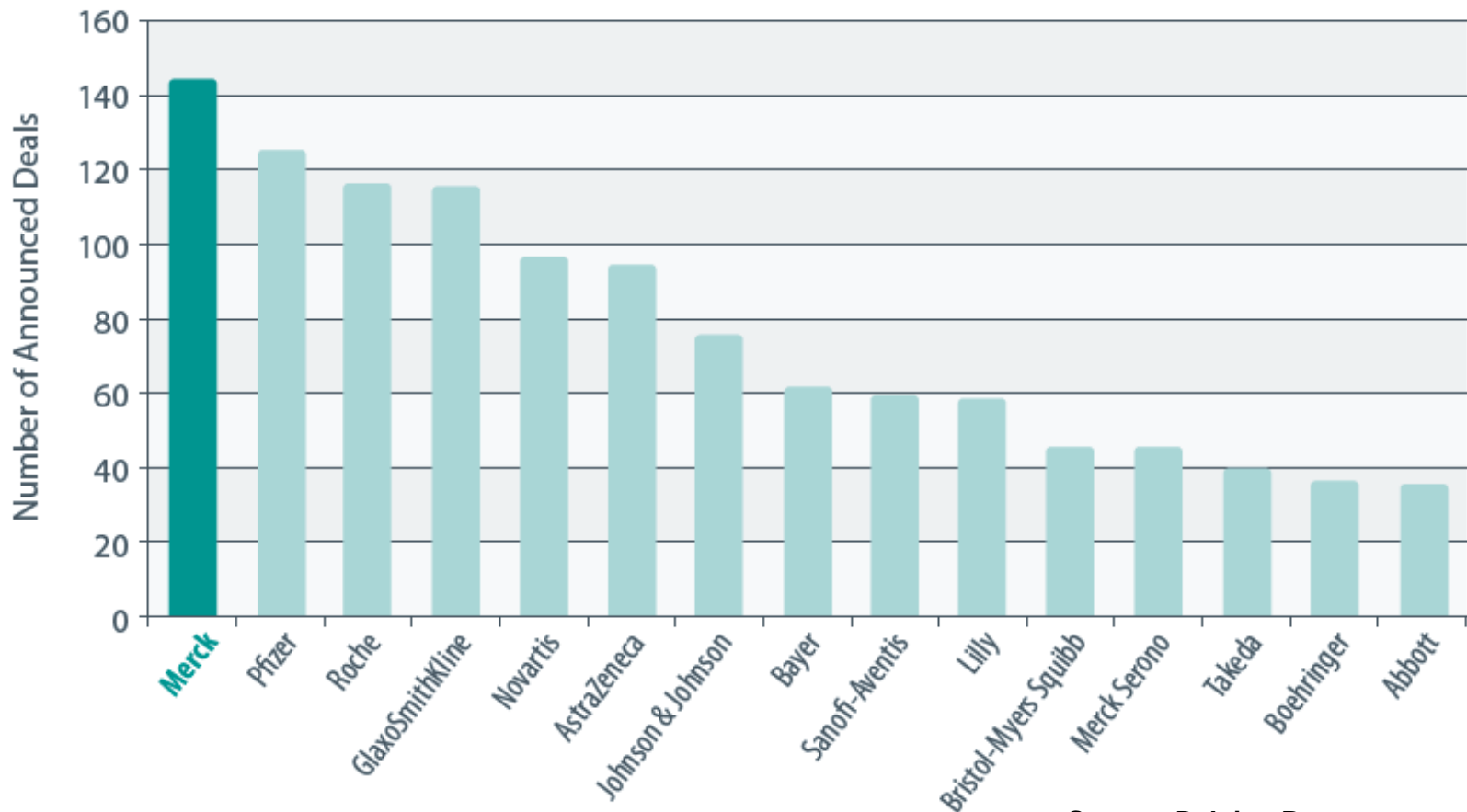
Merck's Approach to Partnering

Many different ways to leverage our strengths with those of our colleagues (and competitors...)

- Pre-Competitive Collaborations
- Consortia
- Academic Partnerships (Represent ~25% of our alliances)
- Licensing
- M&A
- Regional Deals
- Out-licensing

Merck Leads the Field in Biotech Partnering

Top Licensees of Biotech Programs (2005-2009)



Source: Deloitte Recap

Current Merck Pipeline (Feb. 16, 2011)

Phase II	Phase II	Phase III	Phase III
Allergy, Immunotherapy 1 SCH 900237	Insomnia MK-3697	Allergy, Grass Pollen 1 SCH 697243	Glaucoma, SAFLUTAN (MK-2452) (US)
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	Thrombosis, betrixaban (MK-4448)	Diabetes sitagliptin/pioglitazone (MK-0431C)	▶ Herpes Zoster Inactivated VZV vaccine V212
		Fertility, corifollitropin alfa (SCH 900962) (US)	

**= Licensed
Product or Patent**

¹ North American rights only

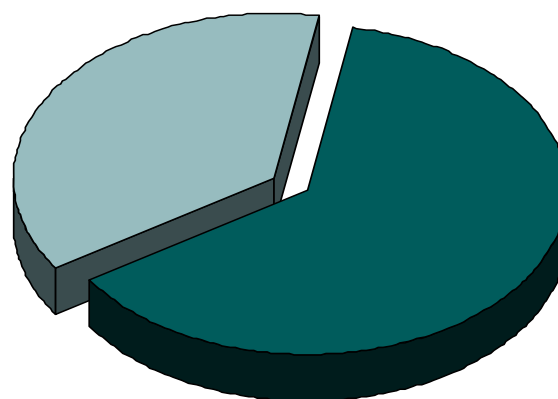
▶ Moved forward since last pipeline update



Merck Licensing Strategy Results in High-Value Alliances

Approximately 63% of Merck's 2009 revenue* is attributable to alliance products and patents

- COZAAR / HYZAAR
- FOSAMAX
- GARDASIL
- ZETIA / VYTORIN
- NEXIUM
- VARIVAX
- ROTATEQ
- ZOSTAVAX



Licensed Products or Patents:
63% of total sales

** Includes 12 months of Merck human health revenue, 2 months of legacy human health Schering-Plough revenue, 50% of full year JV revenue (Sanofi-Pasteur MSD, Johnson&Johnson^oMerck) and 10 months of Merck/Schering-Plough revenue.*

Overview of Merck's licensing process



▶ *Connecting with You*

- Worldwide scouts build relationships and seek out opportunities
- Nonconfidential information submitted for review



▶ *Understanding Your Science*

- Initial nonconfidential review by Review and Licensing Committees
- Confidentiality disclosure agreement signed
- Confidential review
- Face-to-face scientific meetings
- Commercial assessment



▶ *Doing the Deal*

- Term sheet negotiations conducted by Transaction Manager
- Due diligence
- Definitive agreements negotiated
- Agreements executed



▶ *Working Together*

- Alliance Management
 - Alliance managers assigned
 - Alliance launched
 - Monitor progress throughout the agreement
- Basic Research Collaboration Implementation
 - Senior scientists dedicated to successful execution of the research collaboration

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SHARING OUR SUCCESSES



Regional Contacts



Yael Weiss, MD, PhD
Northwest United States



Steven Xanthoudakis, PhD
Canada and Portions of Upper Midwest United States



Robert Pinnock, BSc, PhD
United Kingdom, Ireland, Portugal, and Spain



Manfred Horst, MD, PhD, MBA
France and Germany



Eric Lund, PhD
Scandinavia, Austria, Eastern Europe, and The Balkans



Swami Subramaniam, MD, PhD
India, Philippines, Vietnam, and Indonesia



Kuchan Kimm, MD, PhD
Korea



Jun Suzuki, DVM, PhD
Japan



James Schaeffer, PhD
Southwest United States



Susan Rohrer, PhD
Mid-Atlantic and Midwest United States



Sanjeev Munshi, PhD, MBA
Southeastern United States



Reid J. Leonard, PhD
New England and Latin America



Jeroen Tonnaer, PhD
Benelux, Russia, Israel, and South Africa



Margaret Beer, MSc, PhD
United Kingdom, Italy, and Switzerland



Phil Kearney, PhD, MBA
Australia, New Zealand, Malaysia, and Singapore



Jing-Shan (Jennifer) Hu, PhD
China, Hong Kong, and Taiwan



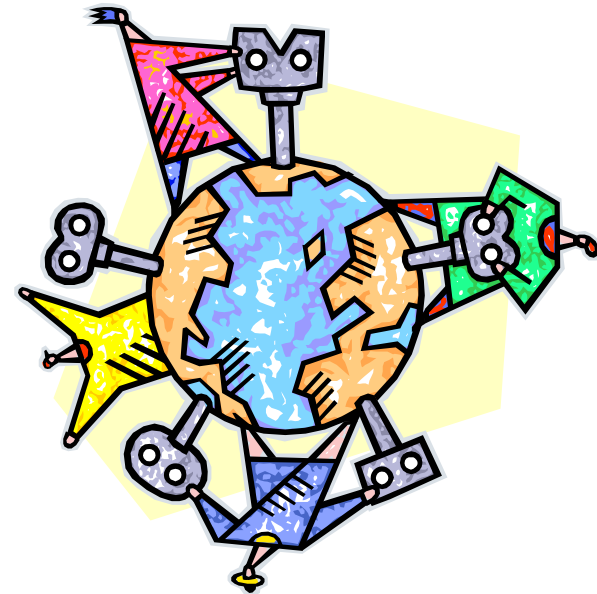
Koichi Kato, PhD
Japan

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“Prospecting / Scouting” for Opportunities

- Senior level Merck scientists
- Build close relationships with local scientific community (companies, academia, VC’s, organizations)
- Worldwide scouts seek out opportunities
- Non-confidential information submitted
- Point of contact for potential partners
- Key locations established



Scientific / Commercial Assessments take Place in Parallel



EVALUATE

-
- Scientific Evaluation led by External Scientific Affairs
 - Initial non-confidential review Confidential disclosure agreement signed
 - Confidential review of data
 - Face-to-face scientific meetings
 - Approval to proceed with due diligence
 - Lead the scientific due diligence process
 - If approved, proceed to licensure

Doing the Deal

Creative & Flexible Approaches



- **Term sheet negotiations conducted by Transaction Manager**
- **Due diligence occurs**
- **Definitive agreements negotiated**
- **Agreements executed**

Alliance Management

- **Alliance Management**
 - Alliance managers assigned
 - Alliance launched
 - Monitor progress throughout the agreement
- **Basic Research Collaboration Implementation**
 - Senior scientists dedicated to successful execution of the research collaboration

We Constantly Scan for Partnering Opportunities



Our Areas of Focus

Cardiovascular



Mature Brands

Diabetes/
Obesity

Oncology

Vaccines



Neurosciences/
Ophthalmology

Biologics

Women's
Health/
Endocrine

Respiratory/
Immunology

Infectious
Diseases



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Licensing Aligns with Franchises and New Technologies



Infectious Diseases

BioRelix
MBL/Medarex
Orchid



Oncology

AstraZeneca
Dana Farber



Diabetes/Obesity

Envoy
Marcadia
SmartCells*



Technologies

Adimab
Avecia Biologics*
BGI
BG Medicine
Depomed
Insmed*
MicroDose
Nuevolution
Roche Diagnostics



Neurosciences and Ophthalmology

Addex
Alectos
Santen



Respiratory/ Immunology

Alk-Abello
Nycomed



Women's Health

Harvard
Japan Tobacco
Théramex



Cardiovascular

Cardiome
ElexoPharm
Portola
Xenon



Vaccines

DNDi
Hawaii Biotech*
Pfenex
UT San Antonio
Wellcome Trust

*acquisition

New & Expanded Areas of Interest for Partnering

- Merck publishes our Areas of Interest twice each year.
- For each of our therapeutic areas, we list the Mechanism of Actions that we are interested in and those that we are not.
- Late-stage clinical compounds (phase 3-ready & beyond) are of interest in any therapeutic area.
- Visit us at:
www.merck.com/licensing
to learn more!

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THERAPEUTIC AREAS AND RESEARCH TECHNOLOGIES

Areas of Interest

HOME • INVESTORS • NEWSROOM • LICENSING • CAREERS • CONTACT US • WORLDWIDE

RESPONSIBILITY RESEARCH PRODUCTS

AREAS OF INTEREST

Atherosclerosis and Cardiovascular Diseases

- ▶ Lipids / Metabolic Syndrome
- ▶ Hypertension / Cardiovascular
- ▶ Thrombosis and Other Areas (Outside Lipids and Hypertension)

PRINT SHARE TEXT SIZE

AREAS OF INTEREST
Click on the icons below for more information about your areas of interest.

Areas of Interest:

Thrombosis (discovery onward):

- Anti-thrombotic agents with improved therapeutic index relative to existing agents
- Basic research collaborations on novel targets
- Biomarkers that can be used to quantify anti-thrombotic effects, anti-platelet effects, and bleeding risk

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MERCK & CO., INC.
Whitehouse Station, N.J., U.S.A.

Merck is Ideally Positioned to Partner in Multiple Therapeutic Modalities

- **Proven small molecule platform**
 - ZOLINZA for cancer - CTCL (**Aton acquisition**)
 - JANUVIA and JANUMET for type 2 diabetes
 - ISENTRESS for HIV
- **Proven vaccine platform**
 - ROTATEQ for infant gastroenteritis (**CHOP**)
 - ZOSTAVAX for shingles (**Osaka Univ. / Biken**)
 - GARDASIL for cervical cancer (**CSL and others**)
- **Emerging biologics and peptide platforms**
 - Acquisition of **GlycoFi, Abmaxis, Insmad** and **Avecia**
- **A new modality - RNAi technology**
 - Acquisition of **Sirna Therapeutics**

Innovation knows no boundaries

In the past 5 years, Merck has signed significant deals with partners in the following countries



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Big Pharma Licensing...

Looking for Innovation

Merck is seeking:

- Partners: Academic, Biotech, Small/Medium Pharma, Big Pharma
- Deal Types: Technologies and Programs at all stages of R&D
- Deal Terms: Unique to partner's needs
- Therapeutic Areas: Today's Merck has 8 Therapeutic areas plus technologies
- Phase III-ready and later candidates are of interest in any area
- A comprehensive list of our Areas of Interest is available at www.merck.com/licensing.

Pharma's Path toward **Open Innovation**

Over the past decade, there has been an increase in:

- **Bio-Pharma and Pharma-Pharma Partnering**
- **More Academic Collaborations**
- **More Risk-sharing/Option Deals**
- **More “Creative” Deal-Making**



“Closed Innovation” Principles

The Experts in the field work for us.

To profit from R&D, we must discover it, develop it and market it ourselves.

If we discover it ourselves, we will get it to the market first.

If we create the most and the best ideas in the industry we will win.

We should control our IP so that our competitors don't profit from our ideas.

“Open Innovation” Principles

Not all the experts in the field work for us. We need to work with experts inside and outside of the company.

External R&D can create significant value: internal R&D is needed to claim some portion of that value.

We don't have to originate the research to profit from it.

If we make the best use of internal and external ideas, we will win.

We should profit from others' use of our IP and we should buy others' IP when it advances our business model.

Merck Research Laboratories is a “Partner of Choice”

- Approximately 12,000 research employees
- Thousands of publications per year
- Hundreds of patent applications per year
- Over 100 NDAs approved since 1963



The quality of our research is a competitive advantage

COMBINING OUR STRENGTHS
SHARING OUR SUCCESSES



MRL - Discovery & Preclinical Science

Guiding Principles

- Find the best science, globally, and access diversity of scientific thought
- Develop great partnerships
- Integrate and synergize with internal scientists
- Deliver an external pipeline to support Merck's therapeutic strategies



MRL Discovery and Preclinical Science: Build a Balanced Portfolio of Partnerships

A balanced portfolio of partnership types will allow optimal prosecution of each program

- **Academic** partnerships to access new science and validate novel targets
- **Biotech** partnerships for innovation and speed
- **Risk-sharing/Option** partnerships allows partners to place more bets
- **Contract** partnerships to increase flexibility and capacity

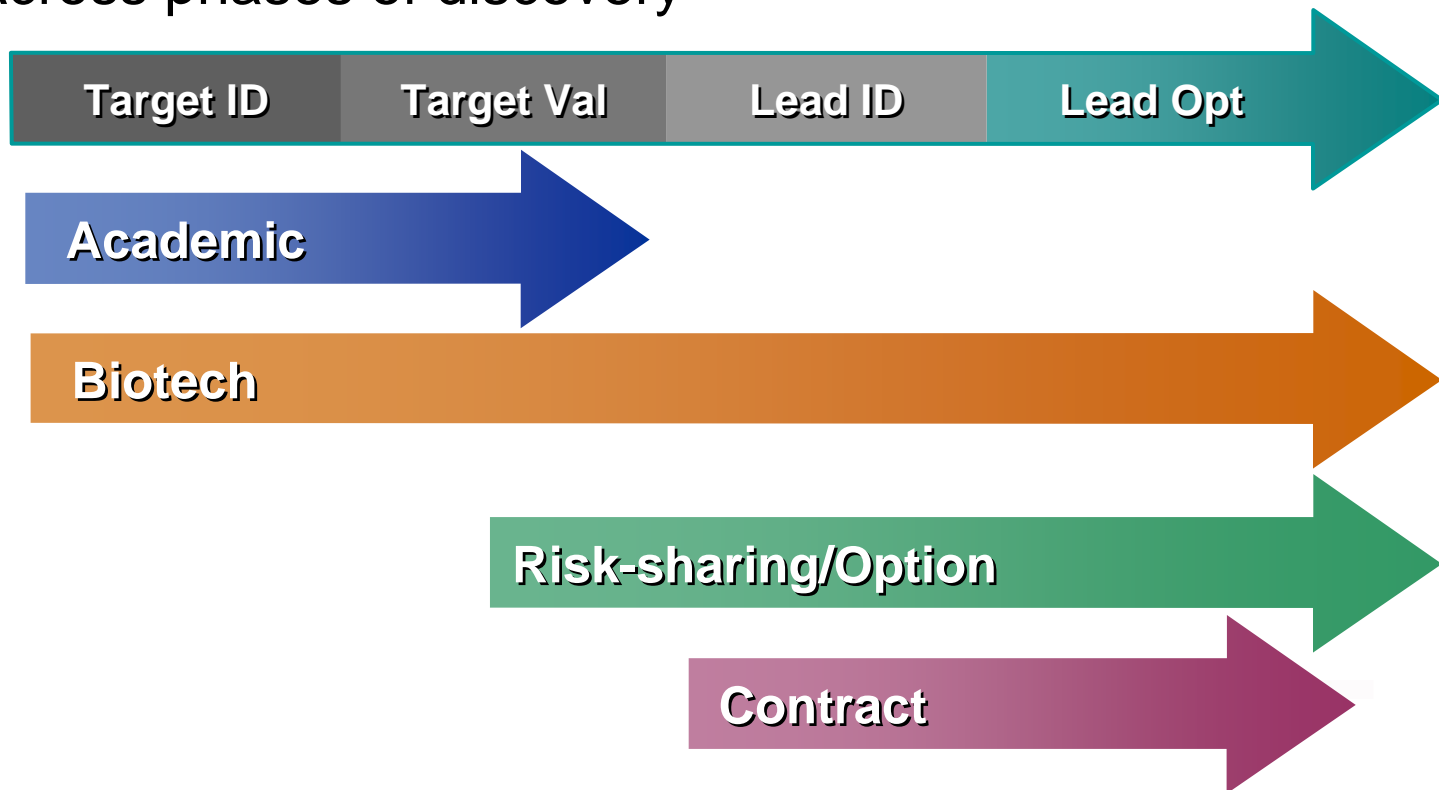


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Discovery and Preclinical Science: Balancing Partnerships

- DPS in MRL will balance different types of partnerships to extract greatest pipeline value from external research
 - Across disease areas
 - Across phases of discovery



Investing in Teams: DPS Contract Partnerships



Merck Team at WuXi Apptech

- Enthusiastic and talented scientists working in program teams led by MRL chemists
- Delivering product candidates for MRL pipeline
 - >20 programs currently progressing in contract partnerships across the globe

Driving Innovation through Early Partnering



Addex: mGluR4 PAM Collaboration for Parkinson's (Dec 2007) and mGluR5 PAM Exclusive License for Schizophrenia (Jan 2008)

Parkinson's Partnership:

- Collaboration and exclusive license to develop mGluR4 positive allosteric modulators. MGlur4 activation has been shown to have an anti-Parkinsonian effect close to dopamine receptor stimulation in various animal models and may also have a direct neuroprotective effect on neurons.
- Merck and Addex will conducting joint research program to identify and develop orally active small molecules.
- Program has advanced and Addex achieved second milestone in 2009.

Early-Stage Partnering in CV Arena

- Xenon entered strategic alliance with Merck to discover and develop novel small molecule candidates for potential treatment of cardiovascular disease.
- Xenon will perform validation studies using its clinical genetics platform, as well as drug discovery and select preclinical development of small molecule compounds for those targets selected by a joint steering committee.
- Merck has the option to exclusively license targets and compounds from Xenon for development and commercialization.
- Merck has a significant presence in and commitment to the cardiovascular space and Xenon joins a distinguished group of our current partners dedicated to discovering breakthrough medicines to treat cardiovascular disease.

Driving Innovation through Academic Partnering

Merck's agreement with Harvard University on new treatments for osteoporosis

- Example of a new breed of industry-academia alliances with close connections between the teams
- Jointly design project proposals, jointly do research, patent and publish results together
- Translational Medicine: Accelerate the move from basic biology → drug targets → medicines

Harvard/Merck Collaboration

“Merck is using their enormous resources to help us assemble huge expression arrays and integrate the signaling pathways in samples we give them.

The two lead Harvard scientists on the project interact with Merck almost daily. The team gets together once a month, and all participants have access to a virtual meeting room where they can post data. We feel like it really is a research collaboration.”

Dr. Laurie H. Glimcher
Professor, Harvard Medical School
Professor of Immunology, Harvard School of Public Health

Chemical & Engineering News (Nov. 17, 2008)

Option Deals: Orchid and Merck

- Companies have established a strategic research collaboration and license agreement focused on discovery, development and commercialization of novel agents for the treatment of bacterial and fungal infections.
- Orchid will undertake discovery and candidate development through Phase IIa human clinical trials.
- Merck will conduct late-stage clinical development and commercialization if regulatory approval is granted.

Clinical Deal: Portola and Merck

- Global collaboration and license agreement for betrixaban, an investigational oral Factor Xa inhibitor anticoagulant currently in Phase II clinical development for the prevention of stroke in patients with atrial fibrillation (SPAF) signed in July 2009.
- Betrixaban could be further developed in other indications, including the treatment or prevention of life threatening blood clots in patients undergoing high risk orthopedic and general surgery as well as those with acute and chronic medical illness.
- Merck assumes development/commercialization costs. Portola retains option to co-fund Phase III clinical trials in return for additional royalties and to co-promote betrixaban with Merck in the United States.
- **Win-Win:**
 - Merck benefits from Portola's deep expertise with the compound and opportunity to expand CV franchise.
 - Portola benefits from Merck's track record in CV medicine and development and marketing capabilities.

Later-Stage Deal: Santen and Merck

- Merck licensed tafluprost in Western Europe (excluding Germany), North and South America and Africa (April '09). Santen retains rights in most of Eastern and Northern Europe, and Asia Pacific (including Japan). Merck will provide promotion support in Germany and Poland.
- Tafluprost, preserved and preservative-free formulations, is approved for the reduction of elevated intraocular pressure (IOP) in open-angle glaucoma and ocular hypertension in numerous countries.
- Merck launched SAFLUTAN® (tafluprost) in the United Kingdom and Spain (Sept. '09) with additional launches pending. SAFLUTAN® is in Phase III studies in the U.S. If approved there, Santen may opt to co-promote.
- **Win-Win:**
 - Merck benefits from the expansion of its ophthalmology portfolio.
 - Santen benefits from Merck's experience promoting products in the licensed territories.

Pre-competitive Deal: Enlight – Innovative Technology Development

- Founded by PureTech Ventures and Merck in 2006
- Current Investors are 6 Pharma companies
 - MERCK (sponsor)
 - LILLY
 - PFIZER
 - JOHNSON & JOHNSON
 - NOVARTIS
 - ABBOTT
- Will develop pre-competitive technologies of specific interest to the Pharma partners
 - Imaging, Biomarker platforms, Protein engineering, and others...

New Paradigms: AZ and Merck develop novel combination anticancer regimen

- AstraZeneca and Merck collaborating in development of combination anticancer regimen composed of two investigational compounds, MK-2206 from Merck (Phase I) and AZD6244 (ARRY-886) (Phase II) from AstraZeneca. Co-administration will be studied in a Phase I clinical trial for treatment of solid tumors and development costs will be shared.
- First collaboration between two large pharma companies to evaluate combining candidate molecules at such an early stage of development.
 - Both companies have in-depth experience in oncology field and mutual determination to develop better cancer therapies.
 - Collaboration is important because it establishes a new paradigm allowing for the testing of agents early on in ways that the best scientific minds think might achieve synergy. (*Nature Reviews Clinical Oncology, Volume 6, July 2009*)

Recent Merck Transactions – From License To Acquisition



BioRelix (October 2010)

- Research collaboration to identify new antibacterial drug candidates using riboswitch platform
- Merck and BioRelix jointly undertake preclinical programs with Merck responsible for clinical evaluation of candidates chosen for further development
- BioRelix receives upfront fee, research funding, milestones and royalties

Santen (April 2009)

- Merck received exclusive commercial rights to tafluprost, a prostaglandin analogue, in Western Europe (excluding Germany), North America, South America and Africa.
- Santen retains commercial rights in most of Eastern and Northern Europe and Asia Pacific, including Japan.
- Merck provides promotion support to Santen in Germany and Poland.

SmartCells (Dec. 2010)

- Merck acquires SmartCells, a company with self-regulating insulin technology
- SmartCells shareholders received an upfront payment and are eligible to receive clinical and regulatory milestones and sales-based payments

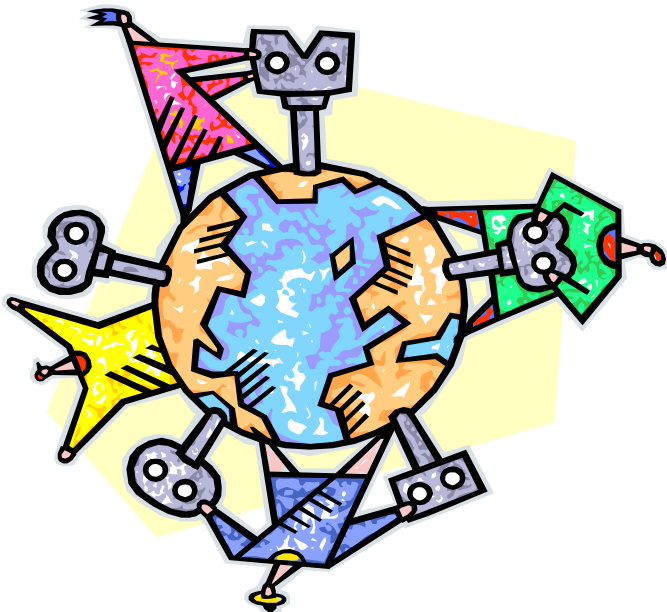
Submission Tips/ Getting Pharma's Attention

Pharma pursues partnerships at all stages

- Because there is a high risk of failure in drug discovery, multiple programs are critical to increase overall probability of success
- The creation of alliances with both companies and academia worldwide are critical for continued success
 - Alliances at all stages of discovery and development complement an innovative and therapeutically diverse pipeline
 - Intense competition exists for high-quality, late-stage opportunities
 - Those pharma with strong internal research capabilities are at an advantage when competing for early-stage partnerships

General Tips for Submitting Opportunities to Pharma

- **Understand each company's strategy and needs**
 - Unlikely your opportunity will move the company's strategy
 - Exceptions could include late-stage opportunities or the need to fill white space
 - Look for gaps you can fill within a pharma's strategy
 - Ask for specific guidance on what the company is looking for



At Merck you may contact your regionally based-scientific scout who are senior level scientists closely linked both to the local subsidiary and to HQ.

Guiding Principles for an Initial Submission to Pharma

- **Provide a clear, concise, non-confidential scientific data package**
 - Your goal is to provide enough information (containing actual data) to help the company representative determine if an offering is within strategy/scope and therefore whether an in-depth review is warranted
 - Understandable by a competent scientist, not necessarily an expert in the field
 - Anticipate obvious questions and answer them in advance
 - Focus on how the opportunity provides a superior solution or answers an unmet need, compared with the state of the art
 - Include links to published matter (papers, patents)
- **Describe what additional data are readily available for an in-depth review**

For Academic Collaborations, Merck's Approach is Driven by Strategy



- Defining goals, delivering against a work plan, and respecting intellectual property are the keys to a successful collaboration.
- Well defined goals are critical
 - Objective to produce new knowledge advancing research/product development
 - May be strategic (“breakthrough” science) or tactical (an accepted approach, but elegantly executed)
- Funding is based on the work plan, not for general lab support
 - Milestones / Renewal based on delivering on objectives
- Intellectual property is important, but not the whole story
 - Generation of actionable knowledge is the key objective
 - License to pre-existing IP sometimes, but not always, needed
 - Merck requires, minimally, an exclusive option period to license new IP arising from Sponsored Research
- Merck is mindful of the university’s mission and obligations
 - We will not try to ‘force-fit’ a structure that conflicts with university policy
 - Need to build additional vehicles for exceptional opportunities

Desirable Attributes of a *Therapeutic Candidate*

- **Satisfies an unmet medical need**
- **Novel target**
 - Is it validated?
 - Will the molecule be first in class? Best in class?
- **Solid IP position**
 - On the target
 - Freedom to operate and methods of treatment
 - On the molecule
 - Composition, synthetic routes, polymorphs, etc
- **Potential for changing standard of care**
- **Biomarker strategy is a plus**

Demonstrable Attributes of an Attractive Therapeutic Candidate

- **Potency** *in-vitro* and *in-vivo*
- **Mechanism** -- evidence that agent “hits the target” in animals
 - Minimally a pharmacodynamic assay
 - Ideally, activity in a validated animal model
- **Selectivity** vs. a large range of receptors, enzymes, ion channels
- Predictable **pharmacokinetics** and proper **dose** selection
- Preliminary **tolerability** and **toxicology** data
- Oral **bioavailability** (for small molecules)
- Good **half-life** for biologics or small molecules
- Licensor understands the **competitive environment** and can describe strengths and potential weaknesses of the molecule
- **Clinical efficacy** if molecule is sufficiently advanced
- Understanding of the **regulatory** environment

What does Pharma Look for in a Platform Technology?

- Incremental improvements to existing capabilities
 - Faster, Better, Cheaper
- New capabilities that confer a competitive advantage or close a gap to a competitor
 - Novel, robust methods to identify and validate targets
 - Formulation and delivery technologies
 - Improved manufacturing methods (chemical or biologics)
 - New therapeutic modalities
 - » RNAi is a recent example
- Tools to help scientists work smarter
 - Automation at all levels
 - Data management, interrogation, and sharing
- Some technologies can be pre-competitive and still be very interesting

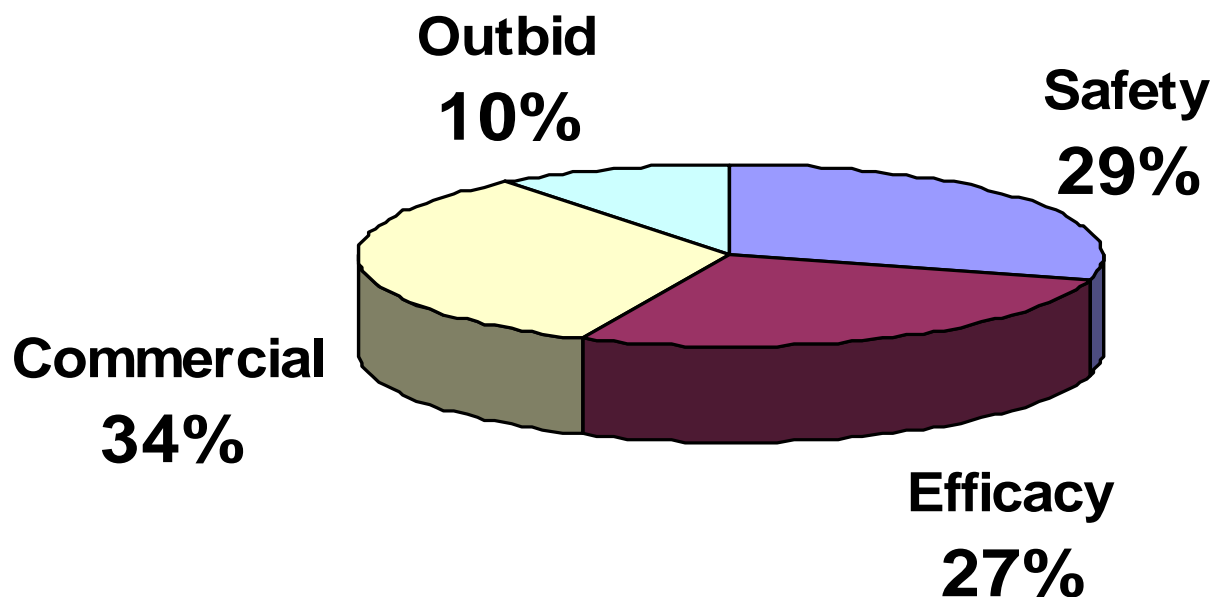


Who is your Audience at a Big Company?

- 1st step: Licensing professional
 - Responsible for initial scientific and strategy assessment
 - Needs enough info to decide if suitable for review by internal experts
 - Can say “no” but is not the final decision maker who can say “yes”
- 2nd step: Therapeutic area head (for targets/ therapeutics) or Functional area head (for platform technologies) and their staff
 - Subject matter experts
 - Responsible for executing on strategy
 - Thinking about a portfolio of projects

Compound Deals that Completed Due Diligence and Did Not Close - 2005 through 2008

Why Deals Did Not Close:





Getting to Agreement

- Managing the negotiation process is critical for satisfactory outcome
- Resist urge to quickly assert your unwavering position
- Invest time in understanding the needs of your partner
- Truly recognize what is a “Must” and what is a “Want”
- Process itself can be transformational to the potential partners
 - Tests established positions of each party
 - Helps plant foundation of partnership



Getting to Agreement

Work toward finding the Agreement Zones

- Focus first on areas of agreement
 - Recognize where positions can be bridged to move quickly to agreement on those issues
- Don't lose invaluable “interpersonal currency” by over-positioning on subordinate issues
- Focus, Focus, Focus on resolving the “Conflicts of Musts”

Success is virtually assured when the pronouns change from “I/My/You/Yours” to “We/Our”



Solutions to “Conflicts of Must Haves”

- Most challenging aspect of deal structuring – requires the greatest amount of creativity
 - Highest risk of failure
 - Often requires most effort to broker deal with internal stakeholders as “Musts” are challenged
- Break conflicts into subsets to test for areas of agreement
 - Resolve as many as possible with goal of narrowing the “Agreement Gap”

Summary: Advice to Potential Alliance Partners

- Have a realistic idea of the value of your asset
- Have a realistic idea of the stage of evolution of your company
 - Ability to comply with terms of alliance without jeopardizing value of asset
 - Level of experience and potential contribution of your Company's capabilities

Get to Know Us: Building Relationships is a Company-Wide Activity

- Private Meetings at Conferences (AUTM, BIO, BPNA, etc....)
- High-Level Speeches about Merck Partnering
- Sponsorship of Conferences Worldwide
- Exhibits at Major Conferences
- Prospecting Trips
- Targeted Company Visits
- Scientific Meetings – scientific one on ones (ADA, AHA, ASCO, etc....)
- Meetings with Venture Capital companies
- Participation on Boards of major biotech and partnering organizations
- Fostering Personal Contacts – at all levels
- Subsidiary Medical Directors reaching out to companies

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Collaboration Creates Value

Combining our Strengths Sharing our Successes

Partners

- Discovery
- Innovation
- Subject Matter Expertise

Merck

- Subject Matter Expertise
- Clinical Development
- Commercialization expertise

COMBINING OUR STRENGTHS
SHARING OUR SUCCESSSES

