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**Rodman & Renshaw 10th Annual Healthcare Conference**  
**New York City, November 11, 2008**

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Interim President & CEO  
Pharmacopeia**

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Joseph A. Mollica, Chairman of the Board,  
Interim President & CEO

*Discovering excellence, driving clinical success* <sup>TM</sup>

# Pharmacopeia



# Forward-Looking Statements



This presentation, and oral statements made with respect to information contained in this presentation, constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Such forward-looking statements include those which express plan, anticipation, intent, goal, contingency or future development and/or otherwise are not statements of historical fact. These statements are based upon management's current expectations and are subject to risks and uncertainties, known and unknown, which could cause actual results and developments to differ materially from those expressed or implied in such statements. These forward-looking statements include, but are not limited to, statements about the successful implementation of PharmacoPeia's strategic plans and the merger transaction between PharmacoPeia and Ligand Pharmaceuticals. Further information about these and other relevant risks and uncertainties may be found in PharmacoPeia's Reports on Form 8-K, 10-Q and 10-K filed with the U.S. Securities and Exchange Commission. PharmacoPeia urges you to carefully review and consider the disclosures found in its filings which are available in the SEC EDGAR database at <http://www.sec.gov> and from PharmacoPeia at <http://www.pharmacopeia.com>. All forward-looking statements in this presentation and oral statements made with respect to information contained in this presentation are qualified entirely by the cautionary statements included in this presentation and such filings. These risks and uncertainties could cause actual results to differ materially from results expressed or implied by such forward-looking statements. These forward-looking statements speak only as of the date of this presentation. PharmacoPeia undertakes no obligation to (and expressly disclaims any such obligation to) publicly update or revise the statements made herein or the risk factors that may relate thereto whether as a result of new information, future events, or otherwise.



# Pharmacoopia/Ligand Merger





- Merger announced on September 24, 2008
- Expected to close by January 2009
- Pharmacoopia shareholders benefit from any growth of combined company
- Exciting combined portfolio with significant royalty potential
- Premium over Pharmacoopia stock price, including further upside through CVR if DARA is partnered
- Pharmacoopia financing risk removed





# Combined Product Pipeline

Product	Indication	Partner	Stage of Development				
			Preclinical	Phase I	Phase II	Phase III / NDA	Marketed
AVINZA®	Chronic pain	King Pharmaceuticals					
PROMACTA™	ITP, Hep C, CLD, CIT	GlaxoSmithKline					
VIVIAN™ / APRELA™	Osteoporosis	Wyeth					
FABLYN®	Osteoporosis	Pfizer					
PS433540	DARA / Cardiovascular	NA					
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AIPC	Prostate Cancer	NA					
SGRM	Inflammation & Cancer	NA					
PS031291	Arthritis/MS (CCR1)	NA					
PS015146	Undisclosed	Schering-Plough					

 Ligand Products  
 Pharmacoepia Products





**John L. Higgins, President & CEO  
Ligand Pharmaceuticals**



# Safe Harbor Statement

- The following presentation contains forward-looking statements regarding the proposed acquisition of Pharmacopeia by Ligand, including projections regarding expectations for potential research and development payments, savings in operational costs, cash burn rates, timing of achieving positive cash flow, and potential revenue and profits of a combined company.
- The forward looking statements made in the presentation are subject to several risk factors, including, but not limited to the reliance on collaborative partners for milestone and royalty payments, regulatory hurdles facing product candidates, uncertain product development costs, disputes regarding ownership of intellectual property, the commercial success of approved products. The failure of Pharmacopeia's stockholders to approve the merger, Ligand's or Pharmacopeia's inability to satisfy the conditions of the merger, or that the merger is otherwise delayed or ultimately not consummated, and a failure of the combined businesses to be integrated successfully. Additional risks may apply to forward looking statements made in this presentation.
- The risk factors facing Ligand and Pharmacopeia are explained in greater detail in the Company's and Pharmacopeia's filings with the SEC, including the most recently filed annual reports on Form 10-K and quarterly reports on Form 10-Q, as well as other public filings.



# Additional Information and Where to Find It

- Ligand filed on October 20, 2008, the SEC a preliminary Registration Statement on Form S-4, which includes a proxy statement of Pharmacopeia and other relevant materials in connection with the proposed transaction. Once, finalized, the proxy statement will be mailed to the stockholders of Pharmacopeia. Investors and security holders of Pharmacopeia are urged to read the proxy statement and the other relevant materials when they become available because they will contain important information about Ligand, Pharmacopeia and the proposed transaction. The proxy statement and other relevant materials (when they become available), and any other documents filed by Ligand or Pharmacopeia with the SEC, may be obtained free of charge at the SEC's web site at [www.sec.gov](http://www.sec.gov). In addition, investors and security holders may obtain free copies of the documents filed with the SEC by Ligand by going to Ligand's Investor Relations website at [www.ligand.com](http://www.ligand.com). Investors and security holders may obtain free copies of the documents filed with the SEC by Pharmacopeia by going to Pharmacopeia's Investor Relations page on its corporate website at [www.pharmacopeia.com](http://www.pharmacopeia.com). Investors and security holders of Pharmacopeia are urged to read the proxy statement and the other relevant materials when they become available before making any voting or investment decision with respect to the proposed transaction.
- Ligand and its respective directors and executive officers may be deemed to be participants in the solicitation of proxies from the stockholders of Pharmacopeia in favor of the proposed transaction. Information concerning Ligand's directors and executive officers is set forth in Ligand's proxy statement for its 2008 annual meeting of shareholders, which was filed with the SEC on April 29, 2008, and annual report on Form 10-K filed with the SEC on March 5, 2008.
- Pharmacopeia and its respective directors and executive officers may be deemed to be participants in the solicitation of proxies from the stockholders of Pharmacopeia in favor of the proposed transaction. Information about Pharmacopeia's executive officers and directors and their ownership of Pharmacopeia common stock is set forth in the proxy statement for the Pharmacopeia 2008 annual meeting of shareholders, which was filed with the SEC on March 24, 2008. Investors and security holders may obtain more detailed information regarding the direct and indirect interests of Pharmacopeia and its respective executive officers and directors in the acquisition by reading the proxy statement regarding the merger, which will be filed with the SEC.





# Why are we Acquiring Pharmacopeia?

- Royalty partnerships
- Drug discovery platform
- Partnerable assets
- Cash and tax assets



# Vision for the Combined Companies

- Consolidated operations with strong fundamentals
  - Strong balance sheet
  - Cost-efficient R&D business with spending discipline
  - Robust product pipeline
  - Diverse royalty partnerships with promising potential revenue and profits
- Leverage highly successful drug discovery capabilities of both companies
  - Focus on early stage drug discovery and development
  - Partner pipeline assets at earliest value inflection point
- Leadership focused on shareholders, market credibility and solid foundation
- Commitment to driving shareholder value and to transparency on the business with goal to drive strong cash flow and earnings



# Combined Revenue Sources

- AVINZA royalties
- Potential royalties from three pending NDA's and future registrations in expanded indications
  - PROMACTA (GSK)
  - FABLYN (Pfizer)
  - VIVIANT (Wyeth)
  - APRELA NDA submission expected in 2009 (Wyeth)
- Milestone and Research Payments from existing Pharmacopeia partnerships
  - \$6.5 to \$25 million potential in 2009
- Potential new license payments from pipeline assets
  - SARM, TPO, Oral EPO, SGRM, DARA, CCR1, JAK3



# Significant Value in Royalty Partnerships

- Numerous deals with nine pharmaceutical companies
- Over 15 programs in various stages of research and development in partnership portfolio
- More than 20 different therapeutic indications being pursued including the largest untapped markets
  - Muscle wasting, COPD, thrombocytopenia, asthma
- More than \$400 million in potential R&D and milestone payments from existing deals

**Combined company will have one of the strongest, most diverse royalty partnership rosters in the small cap biotech universe**





# Ligand's Plan for DARA

- Current 2009 plan
  - Finish Phase IIb trial; spend minimal amount to complete study
- Evaluate partnerability of DARA by focusing on:
  - Quality of data
  - Time and cost to develop drug and get it to market
  - Patent extension options
  - Terms of DARA agreement with BMS
  - Interest level conveyed by past partnering discussions



# Pro Forma Financial Forecast

- Given our current outlook on the combined businesses, 2009 pro forma operating cash burn rate is expected to be \$20 million
- Potential for additional revenue and cash infusion from new license agreements
- More than \$350 million in potential Net Operating Loss carry-forwards before any limitations

**Robustly capitalized company that has sufficient cash to make it to profitability without additional financings**



# Strong Research Platforms

- Highly complementary research technology
- Transaction combines two successful discovery platforms and integrates strong biology and chemistry capabilities

	Ligand	Pharmacopeia
<b>Screening</b>	Focused expertise: -Cell-based assays -Gene transcription	Broad approach similar to Big Pharma: -High-throughput & Ultra-HTS Screening
<b>Chemistry</b>	Discrete compounds 100,000 compound library	Combinatorial chemistry compound library Over 7 million compound screening deck
<b>Targets</b>	Exclusively nuclear and cytokine receptor targets	Mainly GPCR, kinase, ion channel, other targets



# Opportunities and Benefits to Shareholders

- Ligand shareholders gain access to:
  - Numerous royalty partnerships
  - Pipeline assets
  - Drug discovery assets
  - Cash and NOLs
- Pharmacopeia shareholders will participate in:
  - Lucrative potential near-term royalties
  - Well capitalized company with no anticipated financing needs
  - Expanded product pipeline
  - Financial liquidity





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# Overview of Ligand's Partnerships



# Major Collaborations



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- 1997 drug discovery collaboration resulted in eltrombopag (PROMACTA) – small molecule TPO mimetic
- ITP: Numerous clinical studies tested, data published in NEJM, NDA pending approval (16-0 panel vote in favor of drug)
- Hepatitis C: Two Phase III trials were initiated in 4Q:07, Phase II Hep C data published in the NEJM
- CIT: Chemotherapy-induced thrombocytopenia Phase II ongoing
- Sarcoma: Phase I trial
- MAA and NDA submissions for the long-term treatment of ITP expected by year-end.





# Thrombocytopenia - Causes of Disease

*Thrombocytopenia is a condition in which there is an abnormally low level of platelets in the blood.*

- Decreased production of platelets
  - Myelodysplastic syndrome
  - Hepatitis C
  - Cancer in the bone marrow (leukemia)
  - Aplastic anemia
- Increased destruction of platelets
  - Autoimmune, such as ITP
  - Sequestration in the spleen
- Drug-induced
  - Myelosuppression by chemotherapy regimens
  - Anti-virals in Hep C therapies

**Regardless of the underlying cause, thrombocytopenia leads to decreased platelet counts, which puts patients at greater risk for bleeding and serious adverse events.**



# Medical Significance of Thrombocytopenia (US)

(Estimated markets)

## Potential Treatable Patients

ITP	~100,000
Hepatitis C	~120,000
Myelodysplastic syndrome	~20,000
Leukemia / lymphoma	~50,000
Chemotherapy induced thrombocytopenia	~140,000
Intensive care unit – acquired	~500,000
Bone marrow transplants	~50,000
Lupus	~100,000
Cirrhosis	~113,000
HIV/other	~600,000

~ 2 million platelet transfusions per year





# Illustrative Cost for Blood-Related Treatments

## Annual Cost of Care

Pharmaceuticals	~\$15,000 (annual cost of care)
Splenectomy	\$48,000 (procedure and medical management)
Platelet Transfusion	
Single Course	\$4,000
Leukemia	\$84,000 (2 to 4 weeks daily)
Bone Marrow Transplant	\$140,000 (4 to 6 weeks daily)
Chemotherapy	\$20,000 (5 cycles)
NPlate	*\$55,000

References: USRDS, 2005. DrugStore.com, Blood 108:481B-482B, 2006

American Red Cross, Transfusion of Platelets: Current Issues, Medical and Scientific Updates, No 98-6.

\*Cost of therapy will be significantly higher if increased dose is needed; per Cowen & Company Research Report,

August 29, 2008





# SERM Collaborations

- Ligand has two partnerships around Selective Estrogen Receptor Modulators (SERMs):
  - Wyeth
  - Pfizer
- SERMs bind with estrogen receptors in a tissue-specific manner:
  - Exhibit estrogen action in some tissues and anti-estrogen action in other tissues
  - Deliver benefits of estrogen in desirable tissues without the negative side effects
- Potential target markets: osteoporosis, vaginal atrophy and vasomotor symptoms of menopause



# SERM Collaborations

Wyeth

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- Bazedoxifene (VIVIAN) Monotherapy:
  - Received third FDA approvable letter for osteoporosis in May 2008
- Expects to file complete response with FDA 1H09:
  - Submitted NDA for osteoporosis treatment in 3Q:07
  - Submitted MAA for osteoporosis prevention & treatment in 3Q:07
- Bazedoxifene in Combination with Premarin CE (APRELA):
  - FDA Meeting in February 2008 discussed product formulation, bioequivalence and clinical study efforts to support the planned NDA filing.
  - NDA planned by 2H:09





# SERM Collaborations



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- Lasofoxifene (FABLYN) for osteoporosis treatment
- NDA pending approval; FDA Extended Review through January 2009
- FDA Panel had positive vote (9-3) on September 8, 2008 that there is a population of postmenopausal women with osteoporosis in which the benefit of treatment with lasofoxifene is likely to outweigh the risks.





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# SARM

## Selective Androgen Receptor Modulators



# SARM Program

- **Androgens (e.g. testosterone) are steroids that play key roles in bone, skeletal muscle and libido**
- **Current androgenic drugs have disadvantages that significantly limit their use**
  - Non-selective stimulation of all androgen receptors
  - Inconvenient formulations – injectable or topical
  - Available oral drugs have potential for hepatotoxicity
- **Ligand's lead SARMS LGD-3303 and LGD-4033:**
  - Tissue-selective for bone and muscle while sparing the prostate
  - Orally active
  - In preclinical development and expected IND filing in 4Q08
- **Target Indications:** osteoporosis, frailty, hypogonadism, sexual dysfunction, cachexia

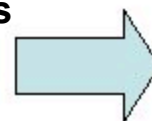
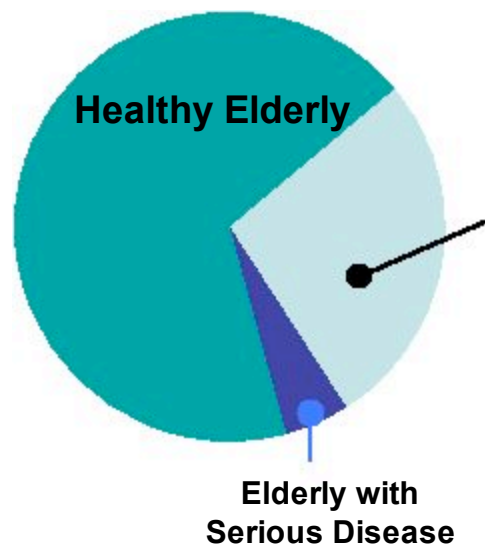
## *Market Need*

- **Convenient, prostate-sparing androgen receptor modulator with activity in bone, muscle and CNS**



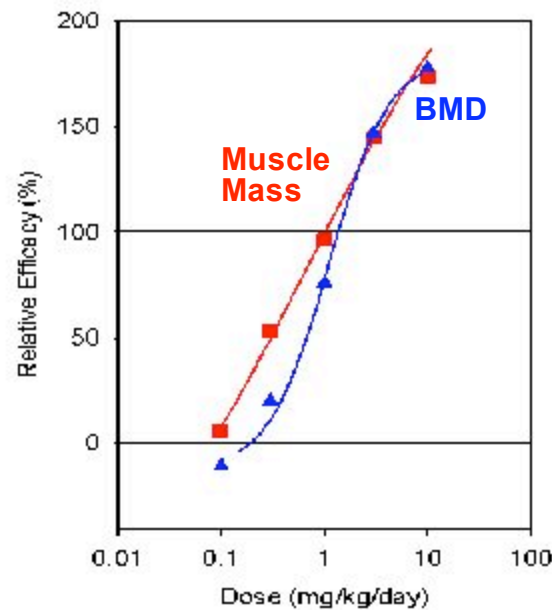
# SARMs Address a Major Unmet Need

## Epidemiology of Aging



Increased falls  
Increased risk of fractures

**Ligand SARM Repletes  
Muscle and Bone Loss**



Normal Level

Hormone Deficient



Revue de Medecine Interne 2000; 21:608,

27 Molecular Aspects Med. 2005; 26:818



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# EPO Mimetic Program





# Oral EPO Mimetics Will Provide New Therapeutic Options to Patients

- Research-stage program to discover non-peptide, small molecule oral agonists
- Builds upon our recent success in discovering TPO mimetic drugs
- Current recombinant EPO proteins and the EPO receptor synthetic peptides in development
  - All require injection
  - Minimal differentiation of products results in limited therapeutic option
- Oral HIF Prolyl Hydroxylase inhibitors in development have the potential for mechanism-based toxicity
  - HIF-induced angiogenesis is a risk
- Oral EPO mimetics will potentially provide targeted activation of the EPO signaling pathway with an oral dosing route



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# TPO Mimetic Program



# Ligand TPO Mimetic Program

- The goal to develop best-in-class molecules to stimulate the production of platelets focused on:
  - Potency
  - Onset of action
  - Safety
  - Oral dosing flexibility
- Ligand's lead molecule, LGD-4665 has a promising efficacy and safety profile
- Ligand is developing a robust library of next generation compounds



# LGD-4665 Summary



- LGD-4665 is approximately 10 times more potent than eltrombopag based on published data
- The drug was safe and well tolerated in Phase I studies
- The strong efficacy, good safety and long half-life may permit weekly dosing regimen
- Conducting numerous pharmacology studies, to establish drug activity and differentiate drug profile from other TPO mimetic drug candidates
- Conducting Phase II ITP trial





# Combined Product Pipeline

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PROMACTA™	ITP, Hep C, CLD, CIT	GlaxoSmithKline					
VIVIAN™ / APRELA™	Osteoporosis	Wyeth					
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PS433540	DARA / Cardiovascular	NA					
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PS540446	Psoriasis / RA (p38)	Bristol-Myers Squibb					
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PS031291	Arthritis/MS (CCR1)	NA					
PS015146	Undisclosed	Schering-Plough					

 Ligand Products  
 Pharmacoepia Products





# Near-Term Milestone and Events Calendar

## Development and Regulatory Events

## Projected Timing

PROMACTA FDA Action	Anytime?
Ligand SARM IND Submission	4Q 08
Phase II ITP Interim Data	4Q 08
Completion of SP CXCR2 Trial in COPD	4Q 08
FABLYN FDA Action	1Q 09
Phase IIb DARA	1Q 09
VIVIAN T FDA Action	1H 09

