

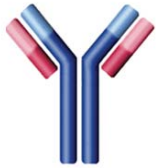
**MORPHOTEK INC.**

**A biopharmaceutical company developing monoclonal antibody products through use of a proprietary human antibody technology**



# Morphotek Overview

- **Antibody-focused biopharmaceutical company**



- founded in 2000, based on a genome evolution technology called *morphogenics*
- developing fully human antibodies through unique process patents
- applying validated technology to internal pipeline and partnerships

- **Company focus and value creation**



- clinical validation of therapeutic antibody pipeline
- leveraging antibody technology in development partnerships with leading research institutes studying cancer, inflammation and infectious diseases

- **Strong scientific and clinical expertise in biologics and oncology**



- 2 clinical-stage compounds (MORAb-003 and MORAb-009)
- multiple preclinical compounds positioned for new Investigational New Drugs (IND)

- **Strong IP position on technology and products**



- 8 issued patents, >50 under active prosecution
- significant barrier to entry - many patents extend past 2020





# Morphotek Business

leverage technology with collaborations for product development

## lead clinical products

### MORAb-003-ovarian cancer

- other cancers: lung, breast, colon cancer
- Ph1-Memorial Sloan Kettering
- Ph2- multi-centered

### MORAb-009-pancreatic cancer

- other cancers: lung, mesothelioma
- Johns Hopkins, Fox Chase, National Cancer Inst

## product pipeline

- MORAb-004-neovascular disease
- MORAb-022-inflammatory disease
- MORAb-028-metastatic melanoma
- MORAb-047-infectious disease
- MORAb-048-infectious disease

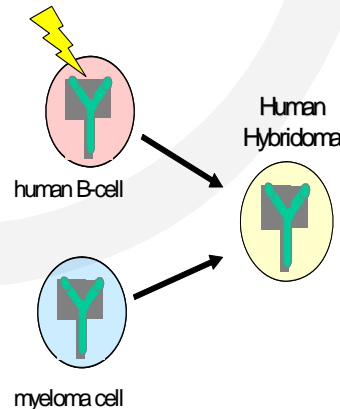
## targets accessed from collaborations



## technology for discovery/products

### human antibody discovery technology

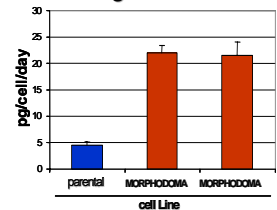
immunize with disease antigen



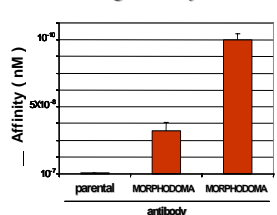
*morphogenics*

antibody/cell line optimization

high-titer cell lines



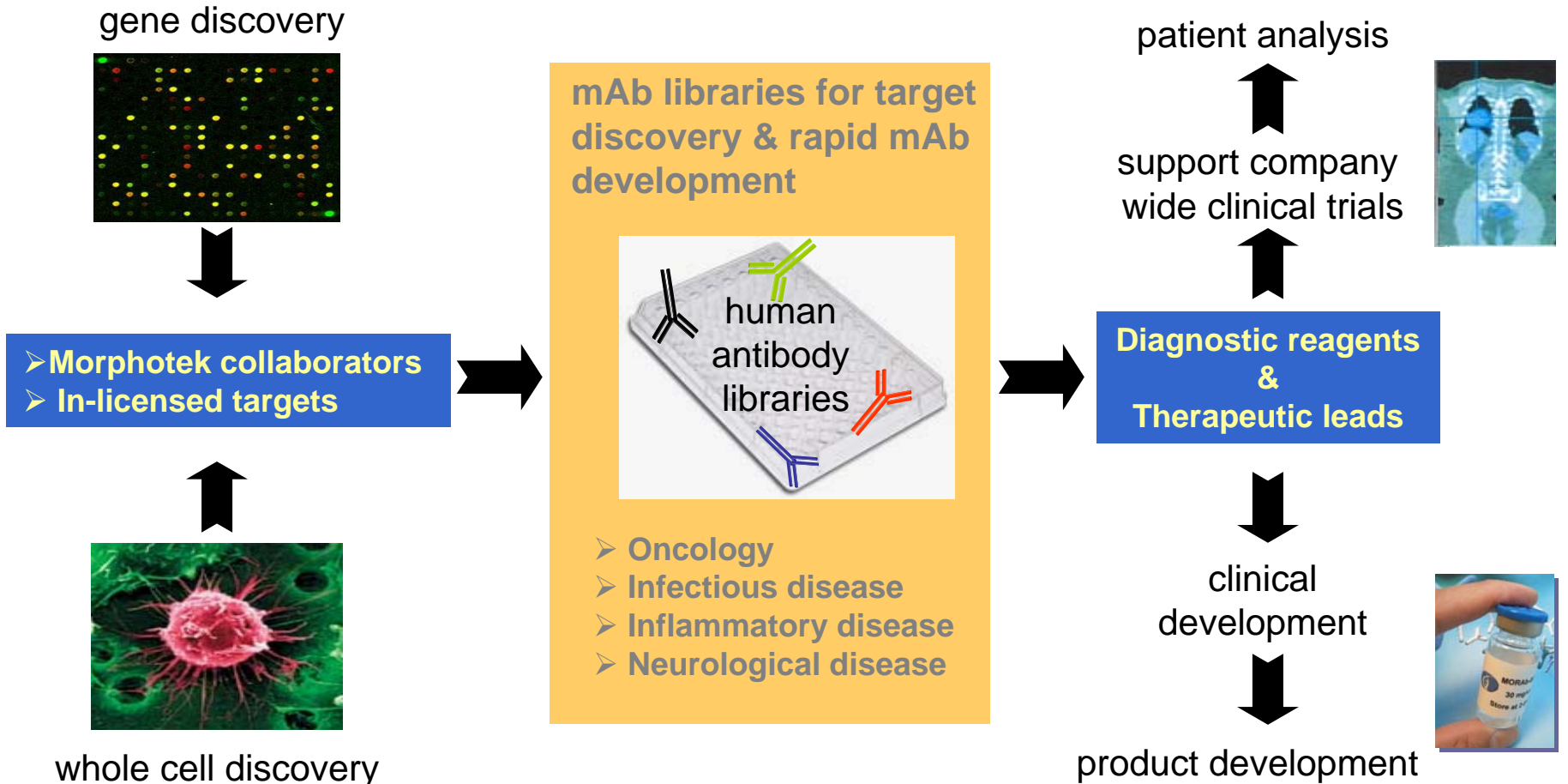
high-affinity MAbs





# Proprietary Antibody Technology

## Integration of technology to support product development



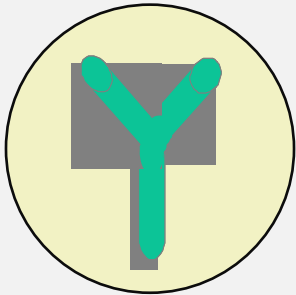


# MORPHODOMA<sup>®</sup> Technology

optimizing human antibodies and production lines via whole genome evolution (*morphogenics*)

## DISCOVERY

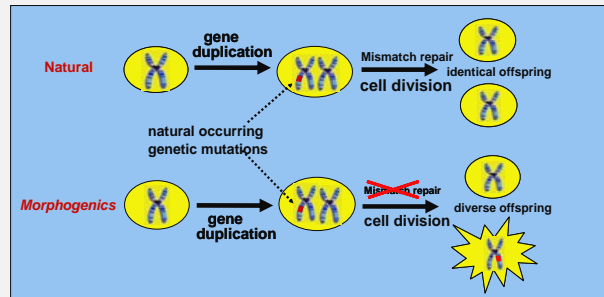
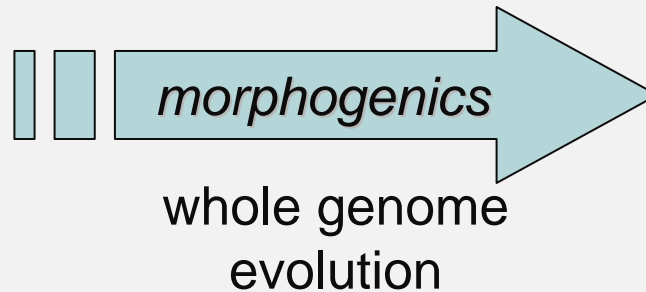
antibody producing cell



derived from:  
patient lymphocytes  
immunized B-cells

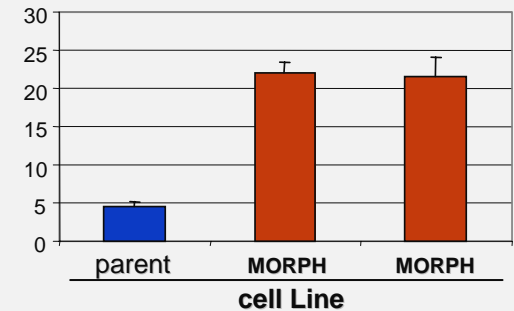
## OPTIMIZATION

antibody/cell line  
optimization

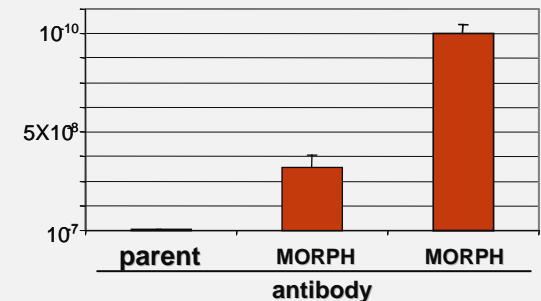


## FINAL PRODUCT

-GMP manufacturing-  
high-titer cell lines



-therapeutic efficacy-  
high-affinity antibodies





# MORPHODOMA<sup>®</sup> Derived Products

Robust pipeline...

Antibody	1 <sup>st</sup> Indication	Other indications	Description	Collaborator	Stage
MORAb-003	Ovarian cancer	Breast, CRC, NSCLC, Renal	antigen on >90% ovarian tumors	Memorial Sloan Kettering	PH1/PH2
MORAb-009	Pancreatic & lung cancer	CRC, Ovarian	antigen on 100% pancreatic tumors	Johns Hopkins/NCI	PH1
MORAb-004	Neovascular disease	Cancer, ADM, DR	antigen on 100% tumor endothelia	Johns Hopkins/John Wayne	PC
MORAb-022	Rheumatoid arthritis	Asthma, MS, Psoriasis	cytokine involved in RA in mouse models	Ludwig	PC
MORAb-028	Metastatic melanoma	Brain, SCLC	Human mAb with clinical activity melanoma	John Wayne Cancer Institute	PC
MORAb-047	Infectious disease	Biodefense	Antigen produced by pathogenic microbes	USAMRIID	PC
MORAb-048	Infectious disease	Biodefense	Antigen produced by pathogenic microbes	USAMRIID	PC



# Post Merger Winning Formula

global biologics efforts to develop disease-specific drugs



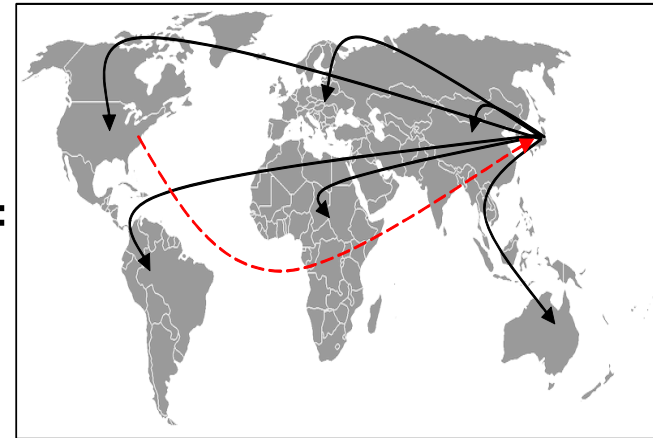
global reach of new biologic therapies



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Global discovery capability  
Product development expertise  
Commercialization engine &  
Marketing muscle

Novel targets  
Proprietary antibody technologies  
Biologics development know-how

Therapeutic antibodies and proteins  
to specifically treat root cause of  
human diseases

