Cellceutix Corporation

100 Cummings Center
Beverly, MA

January 12, 2015

Ticker: **CTIX**

Safe Harbor Forward-Looking Statements

To the extent that statements in this presentation are not strictly historical, including statements as to revenue projections, business strategy, outlook, objectives, future milestones, plans, intentions, goals, future financial conditions, future collaboration agreements, the success of the Company's development, events conditioned on stockholder or other approval, or otherwise as to future events, such statements are forward-looking, and are made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995.

The forward-looking statements contained in this presentation are subject to certain risks and uncertainties that could cause actual results to differ materially from the statements made. Factors that may impact Cellceutix's success are more fully disclosed in Cellceutix's most recent public filings with the U.S. Securities and Exchange Commission.

Management

Leo Ehrlich, CPA
CEO, CFO, Board of Directors

- Co- Founded Cellceutix in 2007
- CEO since 2010
- >14 years of experience as Director, CEO and CFO of publicly traded companies
- Former Founder, Director & CFO of Nanoviricides, Inc.
- BBA, Bernard Baruch College of the City University of New York

W. James Alexander, MF, MPH, FACP
Chief Operating Officer

- Joined Cellceutix in 2014 after 2 years as medical consultant
- Internal Medicine / Infectious Disease training at UAB
- As Public Health Medical Officer, collaborated with US Centers for Disease Control: HIV and HCV epidemiology, STD and tuberculosis treatment
- Over 25 years' experience in clinical development, regulatory and pharmacovigilance positions at SmithKline Beecham, Glaxo, Glaxo Wellcome, POZEN, and BioCryst
- Contributed to successful NDAs for treatments for: bacterial and viral infections (HIV, herpesviruses, and influenza), asthma, COPD, and migraine

Krishna Menon, RCM, PhD, VMD
President, CSO, Board of Directors

- Co-Founded Cellceutix in 2007
- >30 years drug development experience in academia and industry
- Eli Lilly President's Recognition Award for work on cancer drugs, Gemzar and Alimta
- Research Scientist at Dana Farber & Miles Laboratories

Edward Walters, MPH
Head of Clinical Operations

- Joined Cellceutix in 2014
- Expert in clinical pharmacology, pharmacokinetics and pharmacodynamics
- Developed strategies for program design, clinical protocol preparation, study implementation, analysis and interpretation of results for regulatory approvals
- Experienced in FDA and EMA submissions
- Over 30 years' experience in the pharmaceutical industry and academic research

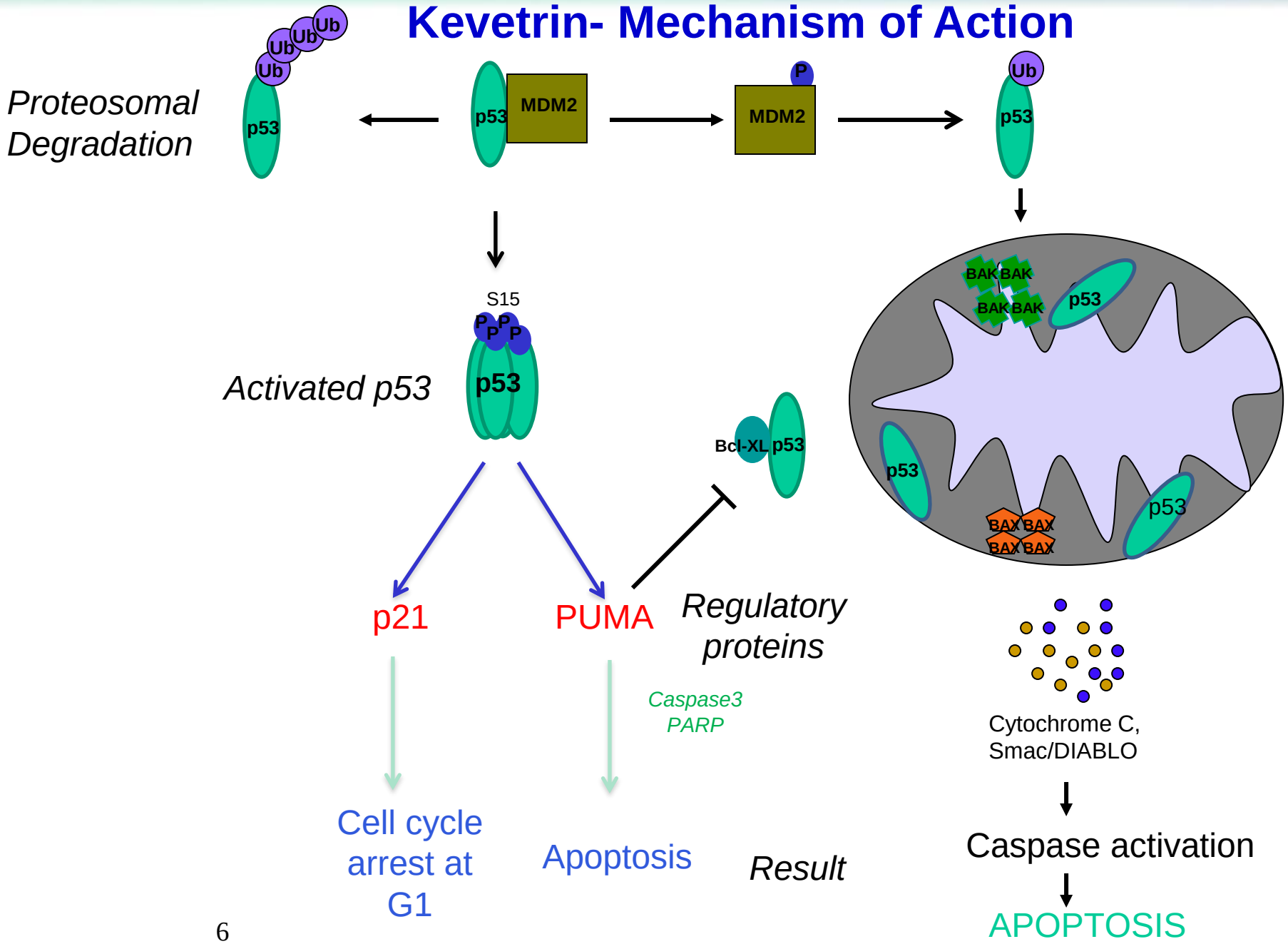
Cellceutix - Clinical Development Programs

- **Kevetrin –** *Anti-tumor Activity; Induction of Apoptosis*
  - Dose-escalation study in patients with refractory solid tumors -- ongoing
- **Brilacidin** – *Acute Bacterial Skin and Skin Structure Infections (ABSSSI)*
  - Phase 2b multicenter study in US completed in 2014
  - Single-dose efficacy demonstrated (one intravenous dose)
- **Brilacidin** – *Oral Mucositis (OM)*
  - Proof-of-concept Phase 2 study in patients with oral cancer undergoing chemoradiation (brilacidin oral rinse)
- **Prurisol** – *Chronic Placque Psoriasis*
  - Proof-of-concept Phase 2 study in patients with mild to moderate psoriasis

Kevetrin (thioureidobutyronitrile)

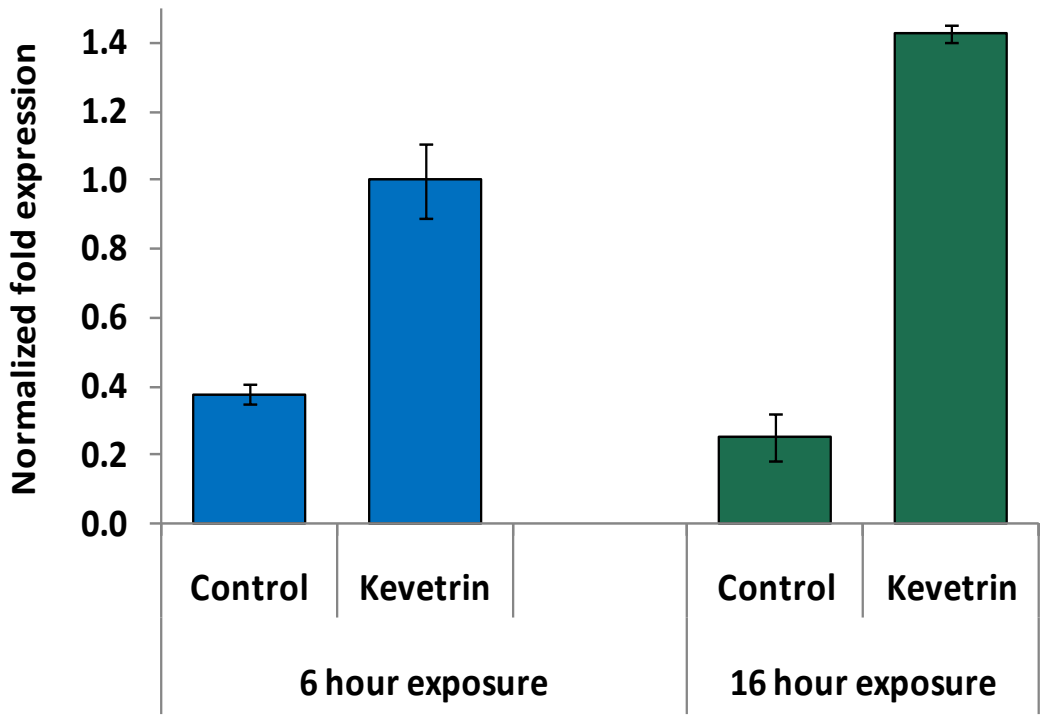
- Small molecule; structurally distinct from other oncology agents
- Dose-dependent anti-tumor activity demonstrated *in vitro*
- Activity shown in three drug-resistant tumor models
- Activity for wild-type p53 and mutant p53 (present in most cancers)
- Excellent nonclinical toxicity profile
- Highly soluble in aqueous solution, highly permeable and polar
- Simple API synthesis and formulation
- Potential for use in combination with other drugs and/or radiation

Kevetrin- Mechanism of Action



p21 - A Biomarker of p53 Activation

Enhancement of expression level of p21 in lymphocytes in mice



Kevetrin - Study CTIX-0000

A Phase 1, Open-Label, Dose-Escalation, Safety, Pharmacokinetic and Pharmacodynamic Study of Kevetrin (thioureidobutyronitrile) Administered Intravenously in Patients with Advanced Solid Tumors

- **34 subjects have received Kevetrin 10 to 350 mg/m2**
- **Subjects have had multiple tumor types: including endometrial, ovarian**
- **p21 increased ≥ 10% in 6 of 14 subjects at lower doses of Kevetrin – data are pending for subjects receiving higher doses of Kevetrin**
- **No hematologic, hepatic, or renal toxicities have been observed**
- **Subjects in next cohort will receive 450 mg/m2**
- **Dose-related, non-serious cutaneous erythema is prevented by pre-medication prior to infusion**

Study is being conducted at Dana Farber Cancer Institute and Beth Israel Deaconess Medical Center

Kevetrin - Study CTIX-0000
One Subject's Experience

- 57 year-old female with metastatic ovarian carcinoma (lesions in colon, spleen) and ascites requiring weekly paracentesis
- Kevetrin begun 1 Oct 2014 at 350 mg/m2 once weekly

- **Cycle 1** (1-22 Oct) – Subject reported increased energy-- went hiking with her family
- **Cycle 2** (29 Oct – 21 Nov) – Scans repeated -- ascites decreased, **previous noted splenic lesion nearly completely absent**, CA 125 stable, lower volume of ascitic fluid on paracentesis
- **Cycle 3** (25 Nov-17 Dec) – Scans repeated -- stable since end of Cycle 2, CA 125 result was increased by ≈ 10%, subject chose to withdraw from the study in consultation with her oncologist

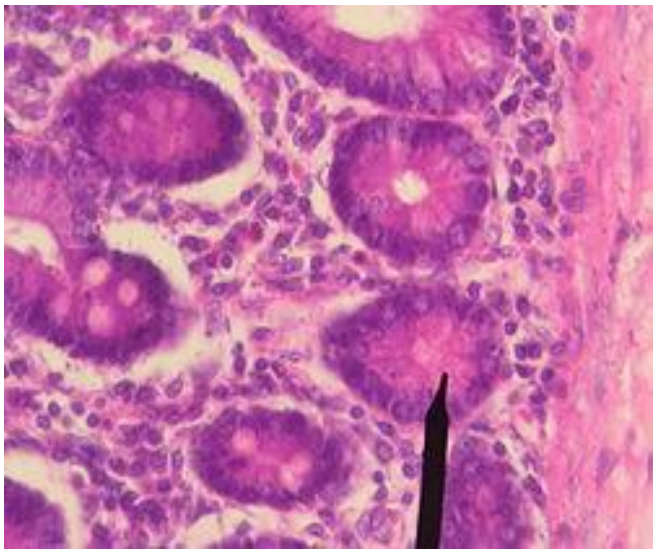
- No hematologic, hepatic or renal toxicity observed

Kevetrin – Moving Forward

Proposed Clinical Trials

- **Phase 1b clinical trial: Acute Myelogenous Leukemia (AML)**
  - Sponsored by University of Bologna and The Italian Cooperative Study Group on Acute Leukemia (GIMEMA Group)
  - Design: Open-label evaluation of efficacy and safety of Kevetrin administered intravenously alone and with cytarabine
- **Phase 1b/2 clinical trial: Drug Resistant Renal Cancer**
  - Beth Israel Deaconess Medical Center; largest recipient of SPORE grant
  - Design: Evaluation of efficacy and safety of Kevetrin in combination with sunitinib
- **Phase 2 clinical trial: Solid Tumors**
  - Final data from CTIX-0000 will be examined and will likely suggest the tumor type(s) with greatest promise of response to Kevetrin

Brilacidin and the Paneth Cell



- Paneth cells are named for Joseph Paneth (1857–1890), an Austrian physiologist
- Paneth cells are found throughout the small intestine and the appendix at the base of the intestinal glands.
- Paneth cells sense bacteria via MyD88-dependent toll-like receptor (TLR) activation which then triggers antimicrobial action
- Paneth cells are stimulated to secrete defensins when exposed to bacteria (both Gram- positive and Gram-negative) or such bacterial products as lipopolysaccharide, muramyl dipeptide, and lipid A

Brilacidin is a defensin-mimetic and its pharmacologic origin may be traced to the defensins secreted by Paneth cells in the gut

Brilacidin

Synthetic Non-Peptide Mimetic of Host Defense Proteins (HDP)

HDPs are small anti-microbial peptides

- Normally produced in skin, mucosal surfaces, neutrophils
- Widespread in the animal kingdom
- HDPs act locally in response to infection
- HDPs target the microbial membrane

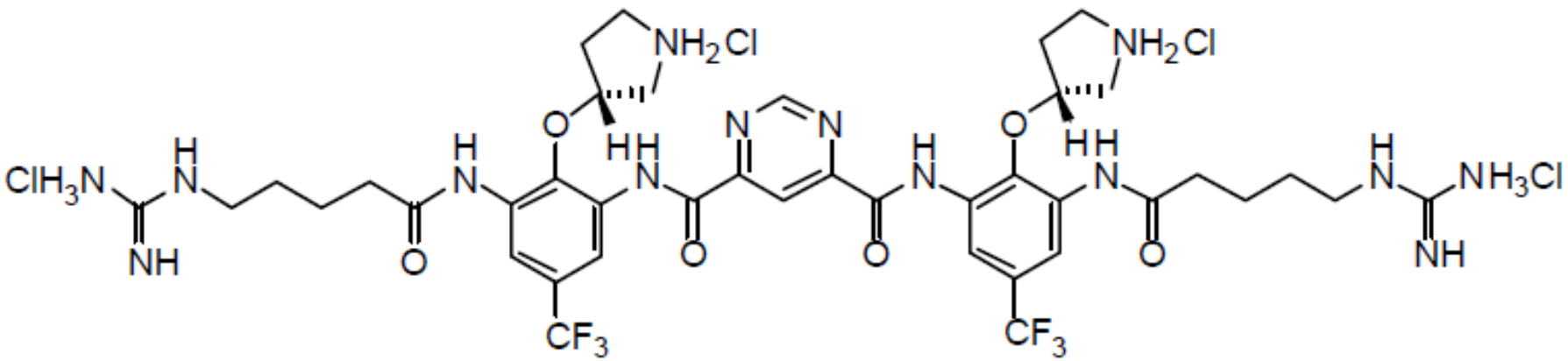
HDPs provide first line of defense against bacterial invasion

- A component of innate immunity
- Action at microbial membrane associated with low potential for resistance development
- Immunomodulatory activity is present – link to innate and adaptive immunity

HDP mimics have potential for therapy / prophylaxis in many conditions

- Antimicrobial - Acute bacterial skin and skin-structure infections (ABSSSI), otitis, eye infections, diabetic foot infection, cystic fibrosis, acne
- Antinflammatory – oral mucositis associated with chemoradiation, ulcerative colitis and other inflammatory GI conditions, atopic dermatitis

Brilacidin



Key Features

- Unique mechanism of action on bacteria – resistance unlikely to develop
- Active against multiple drug-resistant bacteria, including MRSA and VRE
- Active against Gram-positive and Gram-negative bacteria
- Active against stationary-phase bacteria
- Robust sub-MIC activity
- Extended half-life after single dose
- Two Phase 2 studies completed in a total of 430 subjects with ABSSSI

Study CTIX-BRI-204

A Randomized, Double-Blind, Phase 2b Study Comparing Three Dosing Regimens of Brilacidin to Daptomycin in the Treatment of Acute Bacterial Skin and Skin Structure Infections (ABSSSI)

Brilacidin:

0.6 mg/kg single dose IV on day 1

0.8 mg/kg single dose IV on day 1

0.6 mg/kg IV on day 1; 0.3 mg/kg on days 2 & 3

Daptomycin:

4 mg/kg IV daily for 7 days

215 subjects enrolled; 209 received one of the 4 treatments

Primary efficacy endpoint: Reduction in lesion area by ≥ 20% at 48-72 hours after initiation of treatment (per FDA Guidance of October, 2013)

Topline results released October 23, 2014

Study CTIX-BRI-204 – Topline Results

Proportions of Subjects with Early Clinical Response (Primary Efficacy Endpoint) - (≥20 % decrease in lesion area) at 48-72 Hours after the First Dose of Study Drug

	Brilacidin: 0.6 mg/kg single dose	Brilacidin: 0.8 mg/kg single dose	Brilacidin: 3-day regimen	Daptomycin 7-day regimen
Intent to Treat (ITT) Population, n assessed	n = 54	n = 53	n = 54	n = 54
≥ 20% decrease in lesion area (%)	47 (87.0)	48 (90.5)	51 (94.4)	45 (83.3)
All Treated / Safety Population, n assessed	n = 51	n = 48	n = 52	n= 48
≥ 20% decrease in lesion area (%)	47 (92.2)	46 (95.8)	51 (98.1)	45 (93.8)
MITT Population (pathogen isolated at baseline), n assessed	n = 29	n = 30	n = 28	n = 36
≥ 20% decrease in lesion area (%)	27 (93.1)	30 (100.0)	27 (96.4)	34 (94.4)

Study CTIX-BRI-204 – Baseline Pathogens

Staphylococcus aureus **(only) accounted for 80.5% of baseline pathogens causing ABSSSI and 44/107 isolates (41%) were MRSA**

	Brilacidin: 0.6 mg/kg single dose	Brilacidin: 0.8 mg/kg single dose	Brilacidin: 3-day regimen	Daptomycin 7-day regimen	Overall
Pathogen(s)	n = 31	n = 35	n = 29	n = 38	n= 133
S aureus only (%)	27 (87.1)	30 (85.7)	24 (82.8)	26 (68.4)	107 (80.5)
MRSA	10	10	11	13	44
MSSA	17	20	13	13	63
MRSA + Coinfection	0	0	0	2	2
MSSA + Coinfection	1	1	2	2	6
Other single pathogens excluding *S aureus*	3	4	3	8	18

Brilacidin for Treatment of ABSSSI – Conclusions, Implications, Next Steps

- A single dose of Brilacidin is planned for evaluation in the Phase 3 program for treatment of acute bacterial skin and skin structure infections (ABSSSI)
- Brilacidin efficacy in the Phase 2b study was similar to that of a 7-day regimen of daptomycin
- Brilacidin has been designated as a Qualified Infectious Disease Product (QIDP), which results in Fast Track Status, Priority Review, and 5-Year Exclusivity upon NDA approval
- The successful Phase 3 evaluation of Brilacidin for ABSSSI can serve as a gateway for additional indications for serious drug-resistant bacterial infections
- FDA encouraged Cellceutix to submit pharmacokinetic data and additional information from study CTIX-BRI-204; these data are being prepared for submission prior to an End of Phase 2 Meeting

The Clinical Problem of Oral Mucositis

Radiation and chemotherapy induce changes and an inflammatory cascade –

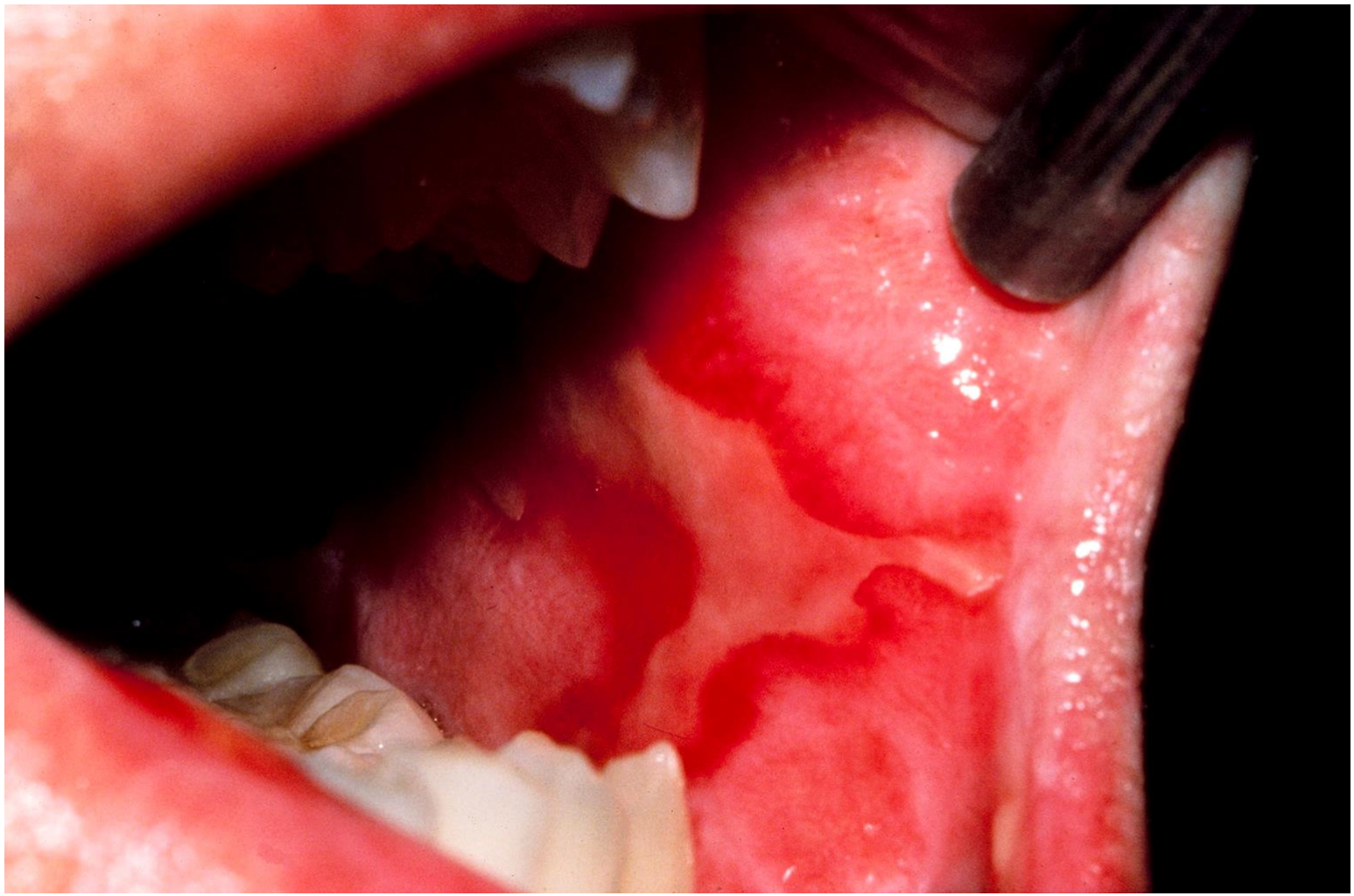
Resulting in :

- **DNA damage; mediated largely by NFKB-dependent pathways**
- **Production of reactive oxygen species**
- **Epithelial cell death**
- **Activation of inflammatory cytokines and matrix metalloproteinases**

Leading to:

- **Destruction of the oral mucosa with ulceration**
- **Pain**
- **Difficulty or Inability in swallowing food / liquids**

A Patient with Oral Mucositis after 4 Weeks of Radiation for SCC of Oral Cavity



Oral Mucositis due to Chemoradiation for Head and Neck Cancer (HNC)

- Nearly every patient who receives CT/RT will develop clinically significant OM
- OM is a driver of resource use and cost of treatment
- The world-wide number of HNC patients is large (estimated 263,900 new cases annually)
- HNC patients are considered a sentinel population – efficacy of a treatment is likely translatable to other at-risk OM populations
- Brilacidin would be the first treatment approved in the US for prevention and/or attenuation of OM in HNC

Brilacidin for Prevention / Attenuation of Oral Mucositis

- **Topical brilacidin applied to hamster oral mucosa protected against radiation-induced mucositis (BioModels data)**
- **No other compound has shown this degree of efficacy in this animal model**
- ***In vitro* data show potent effects of brilacidin on inflammatory mediators present in GI tract**
- **Proof-of-Concept Phase 2 study in patients undergoing chemoradiation for squamous cell cancer of the head and neck is set to begin**

Prurisol (abacavir acetate) – Potential Nonbiologic Treatment for Psoriasis

Proposed Mechanism of Action

Acts through immune modulation and PRINS reduction

- **Reduces IL-20**
- **Reduces skin cell proliferation rate**

Efficacy demonstrated in murine xenograft model

Phase 1 study completed in 16 volunteers

- **Purisol is rapidly converted to abacavir after oral dosing**
- **Well tolerated (single doses)**
- **Predictable pharmacokinetics**
- **Exposure to abacavir is lower than with equimolar dosing of Ziagen (abacavir sulfate) –providing data to support a 505 (b)(2) NDA application**

Prurisol for Psoriasis – Next Steps

- Conduct of a multicenter, double-blind, dose-ranging, placebo-controlled Phase 2 study in patients with mild to moderate plaque psoriasis has been discussed and agreed with FDA
- Prurisol doses to be evaluated include 50 mg once daily, 50 mg twice daily, and 100 mg twice daily
- Efficacy endpoints will include those that would be used in a subsequent Phase 3 development program
- A clinical research organization with extensive experience in dermatologic clinical trial managment has been selected
- Study will begin in the near future

The HDP Portfolio Offers More Promise

HDP Mimics With Activity Against Gram Negative Pathogens

- A series of compounds have demonstrated potent activity against Gram negative bacteria with low cytotoxicity against human cells
- Activity against clinically-relevant pathogens including ndm-1 *Klebsiella pneumoniae*
- Animal studies beginning soon

HDP Mimics With Activity Against *Candida* and *Aspergillus species*

- Identification of highly potent compounds against *C. albicans,* non-*albicans Candida*, and As*pergillus* species with low cytotoxicity, good tolerability
- Award of Phase 2B SBIR grant from the NIAID to collaborator Fox Chase Chemical Diversity Center (up to $1.5 million over two years)
- Animal studies beginning soon

Cellceutix Corporation - Summary

- A strong and diverse pipeline of potential products with novel mechanisms of action
- Development-stage compounds to address unmet medical needs:
  - Single-dose therapy for ABSSSI
  - Prevention and/or attenuation of oral mucositis caused by chemoradiation
  - A new option for refractory solid tumors and other malignancies
  - A non-biologic, oral therapy for chronic psoriasis
- HDP mimics that have the potential to provide treatment for serious Gram negative and fungal pathogens
- HDP mimics that have demonstrated anti-inflammatory activity
- A committed team of drug development professionals backed by experienced senior management

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