

*Illuminating Science.
Empowering Patients.*

CONFLUENCE LIFE SCIENCES ACQUISITION

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President and CEO

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Disclaimer

Any statements contained in this presentation that do not describe historical facts may constitute forward-looking statements as that term is defined in the Private Securities Litigation Reform Act of 1995. These statements may be identified by words such as "believe", "expect", "may", "plan," "potential," "will," and similar expressions, and are based on Aclaris' current beliefs and expectations. These forward-looking statements include expectations regarding the potential benefits of the Confluence acquisition and the clinical development of the combined companies' drug candidates. These statements involve risks and uncertainties that could cause actual results to differ materially from those reflected in such statements. Risks and uncertainties that may cause actual results to differ materially include uncertainties inherent in the conduct of clinical trials, Aclaris' reliance on third parties over which it may not always have full control, and other risks and uncertainties that are described in the Risk Factors section of Aclaris' Annual Report on Form 10-K for the year ended December 31, 2016, Aclaris' Quarterly Report in Form 10-Q for the quarter ended June 30, 2017, and other filings Aclaris makes with the U.S. Securities and Exchange Commission from time to time. These documents are available under the "Financial Information" section of the Investors page of Aclaris' website at <http://www.aclaristx.com>. Any forward-looking statements speak only as of the date of this presentation and are based on information available to Aclaris as of the date of this release, and Aclaris assumes no obligation to, and does not intend to, update any forward-looking statements, whether as a result of new information, future events or otherwise

This presentation also contains estimates and other statistical data made by independent parties and by us relating to market size and other data about our industry. This data involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. In addition, projections, assumptions and estimates of our future performance and the future performance of the markets in which we operate are necessarily subject to a high degree of uncertainty and risk.



Confluence Life Science Acquisition Summary

Assets

- JAK inhibitors - oral and topical - (next generation)
- ITK inhibitors - oral and topical - (“anti-IL-17”)
- MK-2 inhibitor - oral - (“anti-TNF”)

Platform

- KINect™ platform – drug discovery engine
- Proprietary compound library and computational chemistry capability
- Medicinal chemistry, disease biology, immunology, pharmacology and preclinical development expertise

People

- Co-inventors of tofacitinib and former leaders of Pfizer kinase program (including JAK inhibitors)
- Kinome experts - chemists and biologists; combined 300+ years of drug discovery experience
- Significant experience in small molecule drug discovery through Phase II



Transaction Founded on a Strategic Partnership

Pre-transaction Aclaris

- Oral and topical assets
- Robust intellectual property estate
- Drug development infrastructure
- Scientific leadership position in Hair Loss (Angela Christiano, Ph.D. / Columbia)
- Near Commercial A-101 Program
- Confluence Collaboration on Topical Soft JAK



Confluence

- Product pipeline that reinforces JAK leadership and expands inflammation/immunology franchise
- KINect™ Kinase Inhibitor Discovery Platform
- Drug development expertise
- Team composed of ex-Pfizer leadership in inflammation and immunology

**Fully Integrated
Biopharmaceutical
Company and Leading
Developer of Small
Molecule Therapeutics
for Immunological
Disorders of the Skin
and other Organs**



Financial Highlights

Deal Terms


- Confluence equityholders received an upfront payment of \$10 million in cash and \$10 million in common stock
- Up to \$80 million in contingent payments upon achievement of certain development, regulatory and commercial milestones, plus additional low-single digit royalties

Financial Implications for Aclaris

- Acquired business is cash neutral to earnings for the six months ended June 30, 2017
- Integration of the Confluence Discovery Technologies CRO business as we incorporate personnel to more fully leverage the St. Louis based operations

Confluence Discovery Technologies

- Retain current talent and invest in growth and our internal capability expansion
- 80+ clients since founding spanning large biotech and pharma to smaller start-up biopharmaceutical companies; 90+ projects for 30+ clients in 2017
- Clients span large biotech and pharma to smaller start-up biopharmaceutical companies who utilize CDT to supplement their R&D for difficult-to-execute specialty skill bases and for programs which are difficult to source
- 40 Scientists: 40% Ph.D.; 60% B.S./M.S.



Acquisition of Confluence Expected to Drive Future Growth

Short term and Long term

Synergies in drug discovery through Phase 2

Internalizes preclinical research and development services which are currently outsourced

CRO business facilitates cutting edge technology and disease expertise in immunology, pharmacology and biochemistry

Cash neutral in near-term

Supports and extends Aclaris' JAK kinase inhibitor programs

Enables targeted development of novel therapeutics for inflammation and immunology in dermatology and adjacent therapeutic areas



Confluence Assets

MK-2 Pathway Inhibitor CDD-450 “Oral Anti-TNF”

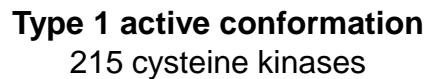
- Psoriasis / Psoriatic Arthritis, RA, Chronic Inflammation
- Highly potent and designed to escape the tachyphylaxis associated with p38 kinase inhibitors

JAK Inhibitors

- Highly selective, covalent and non-covalent
- Oral and soft topical

ITK Inhibitors “Oral Anti-IL17”

- Psoriasis, Atopic Dermatitis
- Oral and soft topical



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Platform - Research and Development Capabilities

BIOCHEMISTRY & ENZYMOLOGY

- Leaders in Mechanistic Enzymology
- Custom Assay Development
- Compound: Target Interaction
- Enzyme Inhibitor Mechanisms
- Direct Binding Kinetics
- High Throughput Screening



CELL & MOLECULAR BIOLOGY

- Target Clone/Express/Purification
- Translatable Cellular Assays
- Target Modulation/Disease Assays
- Cell Pathway Interrogation
- Custom Assay Development
- Multiple Assay Platforms



TRANSLATIONAL RESEARCH

- Biomarker Assay Development
- Clinical Biomarker Assessment
- *In vivo* Efficacy and PK Studies
- PK/PD Relationship
- Release Assay Validation



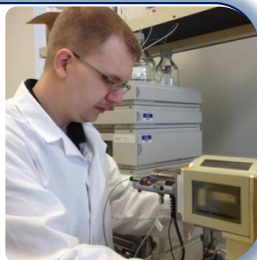
IMMUNOLOGY & IMMUNO-ONCOLOGY

- Cytokine Expression
- Th Cell Differentiation/Activation
- CTL Differentiation and Function
- B Cell and NK cell Function
- Ag Specific Cell and *In Vivo* Models
- HWB/PBMC/Monocyte Assays



BIOANALYTICAL CHEMISTRY

- Non-GLP Analytical
- Bioanalytical Method Development
- Bioanalytical Method Validation
- Pharmacokinetic/Toxicokinetic Analysis
- Ab Solubility and Aggregation



COMPUTATIONAL & MEDICINAL CHEMISTRY

- Schrödinger™ Enabled Structure Based Drug Design
- Computational Chemistry
- Library Design
- Compound Synthesis



Confluence People - Ex-Pfizer “Kinase and JAK experts”

Walter Smith CEO

Former VP Research & Global Head, Pfizer Inflammation, co-leader of Pfizer Licensing Team

Delivered 8 clinical candidates, 6 INDs and 1 NDA in inflammation and cancer

Joseph Monahan, PhD CSO/Founder

Former Executive Director, Pfizer Inflammation Research and Leader of Global Kinase Technology Team

>95 publications and patents (>30 total on kinases)

Jon Jacobsen, PhD Chemistry Director

Former Research Fellow and Director, Pfizer Chemistry
>100 publications and patents (15 total on kinases)
Project Lead for PFE JAK Program

Paul Changelian, PhD Biology Director

Immunologist/drug discovery leader at pharma (Pfizer) & biotech (Lycera, Infinity)
Validated JAK 1/3 as target for transplant/RA/psoriasis, leading to approval of Xeljanz®

Program Initiation

Hit

Lead

Candidate

IND

BIOLOGY and COMPOUND PROFILING

- Enzyme/Cellular assay development and screening
- Immunology models
- *In vivo* efficacy studies
- *In vitro* ADME
- *In vitro* /*In vivo* Metabolite profiling
- *In vivo* DMPK
- *In vivo* toxicology

CHEMISTRY

- Structure based drug design
- Medicinal Chemistry
- API synthesis
- Process Development
- Pre-Clinical cGMP API production
- CMC generation
- Patent filing

PRE-CLINICAL IND ENABLING STUDIES (GLP)

- GLP Analytics
- Drug-Drug Interaction
- Genetic toxicology
- Safety pharmacology
- Definitive PK
- General toxicology
- Biomarker development

The Kinase Opportunity – Rational Targeted Drug Discovery

Creating New Medicines Targeting Previously Inaccessible Parts of the Kinome

KINect™ Technology Platform

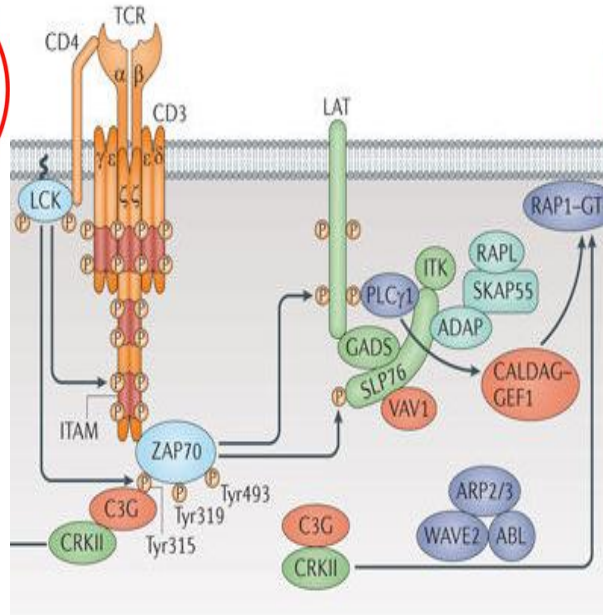
Proprietary chemical library and integrated capabilities for interrogating the Kinome

- Solves challenges encountered in the class
 - Selectivity
 - Biochemical efficiency
- Validity of targeting kinases is commercially established
- Plethora of validated kinase targets are inadequately drugged
- Kinect™ platform allows rational targeting of validated kinase targets

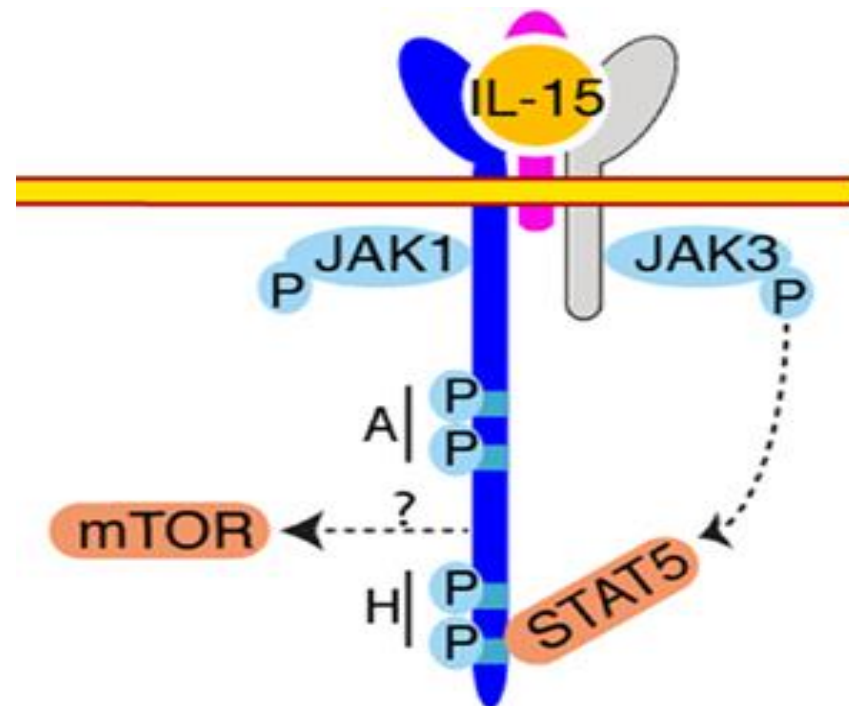
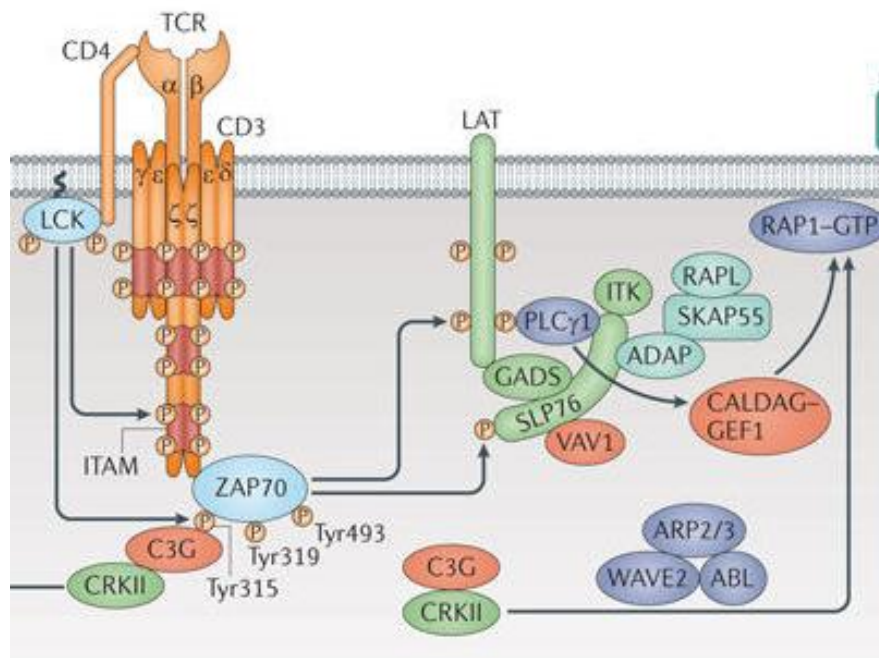
Kinase Drugs Represented \$240B in Aggregate Global Sales from 2011-2015



500 member class, representing 2% of the human genome



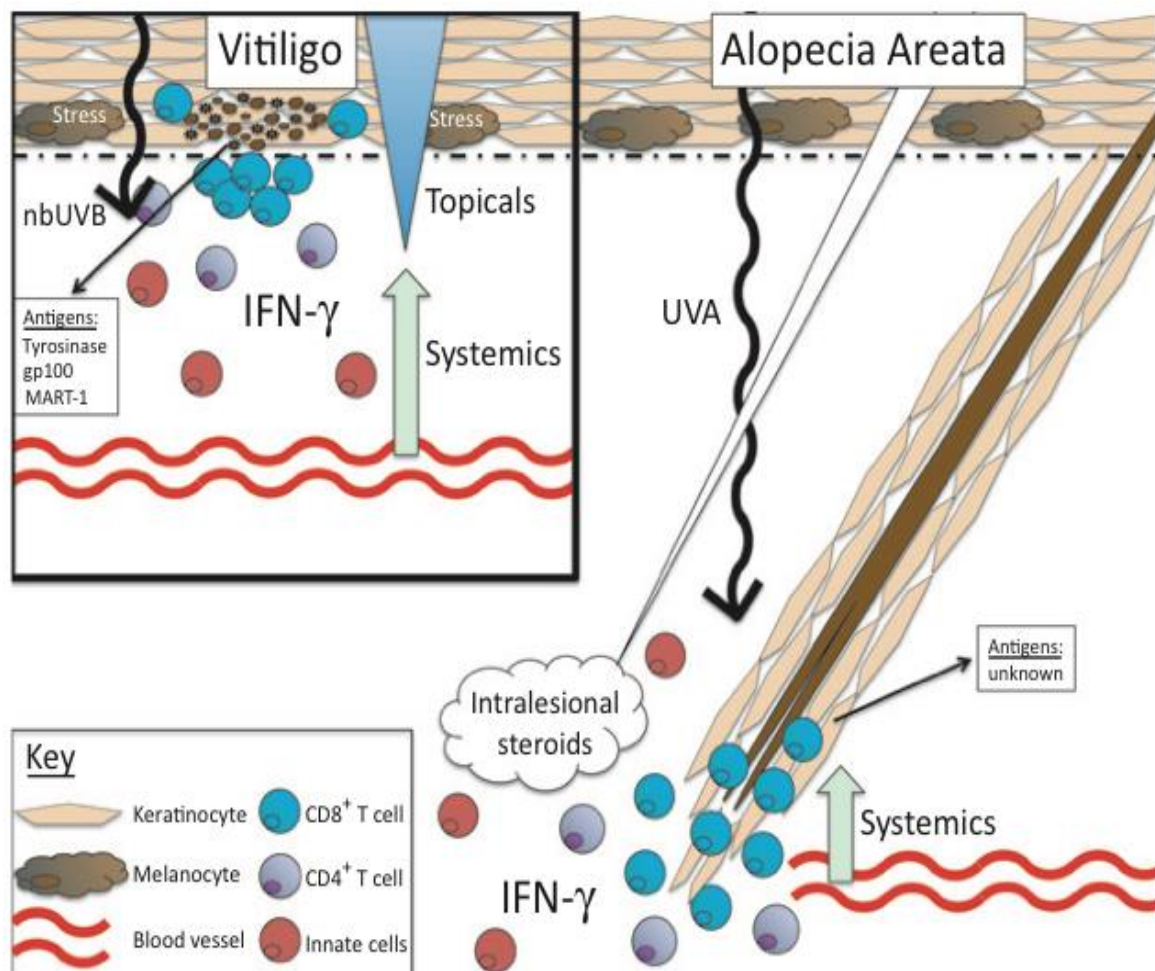
Confluence Pipeline: Antigen and Cytokine Receptor Signaling Inhibitors for Dermatology



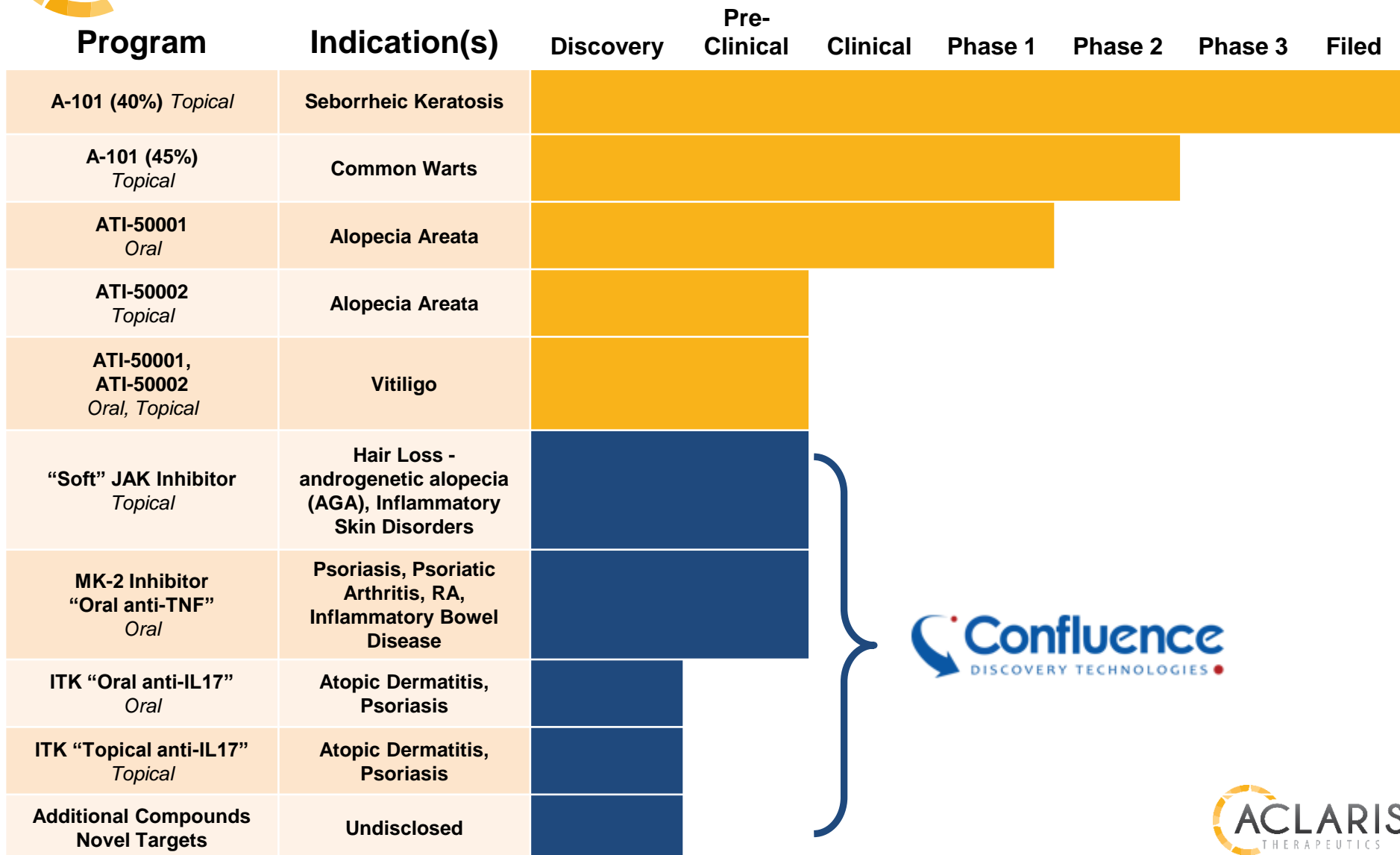
- **Alopecia Areata:** IFN γ (JAK1/2) and IL-15 (JAK1/3)
- **Vitiligo:** IFN γ (JAK1/2) and IL-15 (JAK1/3)
- **Psoriasis:** IFN γ (JAK1/2), IL-12/23 (JAK2/Tyk2), IL-22 (JAK1/Tyk2) and IL-21 (JAK1/3)
- **Atopic Dermatitis:** IFN γ (JAK1/2), TSLP (JAK1/2), IL-22 (JAK1/Tyk2) and IL-4/IL-21 (JAK1/3)
- All autoimmune disease driven by antigen recognition/T cell receptor (ITK)

Benefits of Targeted, Topical Soft Drugs

- Improved understanding of cytokine pathways in skin enables targeted pharmacology
- Differential formulations allow skin penetration to depth of disease activity
- Topical soft drugs are designed to be:
 - Active in the skin
 - But, inactivated in the bloodstream



Confluence Adds Complementary Pipeline



Building a Fully Integrated Biopharmaceutical Company

