



Novel Therapies for Metabolic Disease

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Verva Diabetes & Obesity Portfolio

PROGRAM	Discovery	Preclinical	Phase 1	Phase 2a	Phase 2b
VVP808 ± metformin	*				
VVP808 Target	‡				
VVP100X	§				
GES Platform [■]					
FGFR (obesity)	ASOs †				

* Clinical repurposing; non-TZD/PPAR insulin sensitizer; potential synergy with metformin

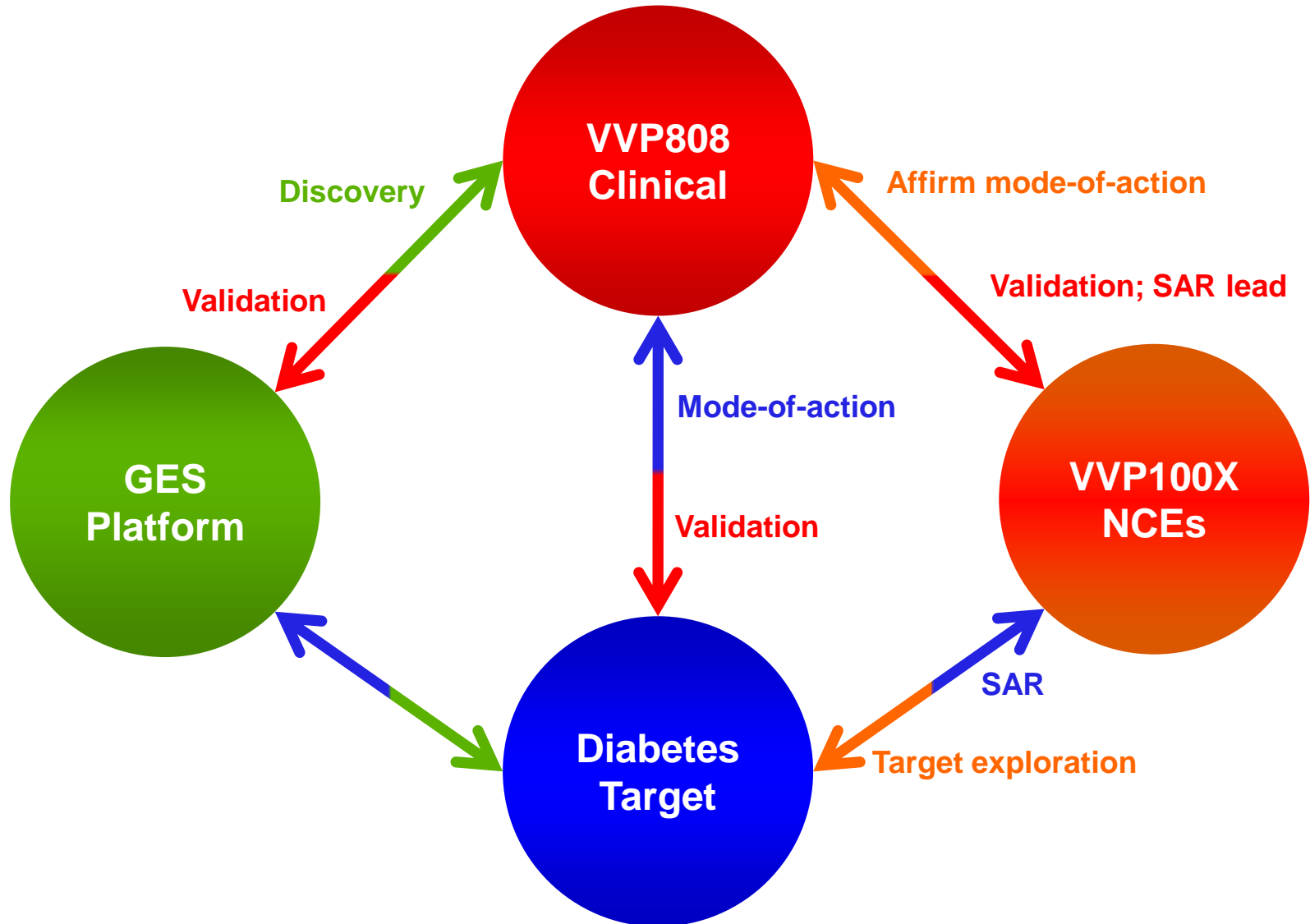
‡ Novel insulin sensitizing mode-of-action and target

§ Proprietary insulin sensitizers based on VVP808 structure & mode-of-action

■ Target- and mechanism-independent diabetes discovery

† Prevents fat formation: aspects of IP licensed to ISIS Pharmaceuticals

Verva Convergent Programs



Verva Convergent Value Proposition

New, Safer Insulin Sensitizers with Added Health Benefits



Validated and de-risked by VVP808 clinical data

Market for New Insulin Sensitizers

- **Multi-billion dollar non-insulin anti-diabetic market**
 - USD 12.2B in 2009 (7 major markets); USD 30B by 2019
- **TZD insulin sensitizers dominated the market**
 - Avandia® and Actos® sales USD 5.5B in 2009
 - Restricted/withdrawn due to safety issues
- **Developmental products directed towards narrow range of targets**
 - DPP4, GLP-1, SGLT2...not insulin sensitizers

Achievements Since May 2010

■ Diabetes:

- 58 patients enrolled in VVP808 clinical trial
- 8 potential VVP808 diabetes target proteins identified
- 20 new VVP808 analogues synthesised
 - More active and selective than VVP808 *in vitro*
 - Affirmed MOA hypothesis

■ Obesity:

- FGFR technology advanced to Isis Pharmaceuticals' formal development pipeline (FGFR4_{Rx})
- US Patent issued protecting IMPDH fat blocking technology
 - US 7,915,255



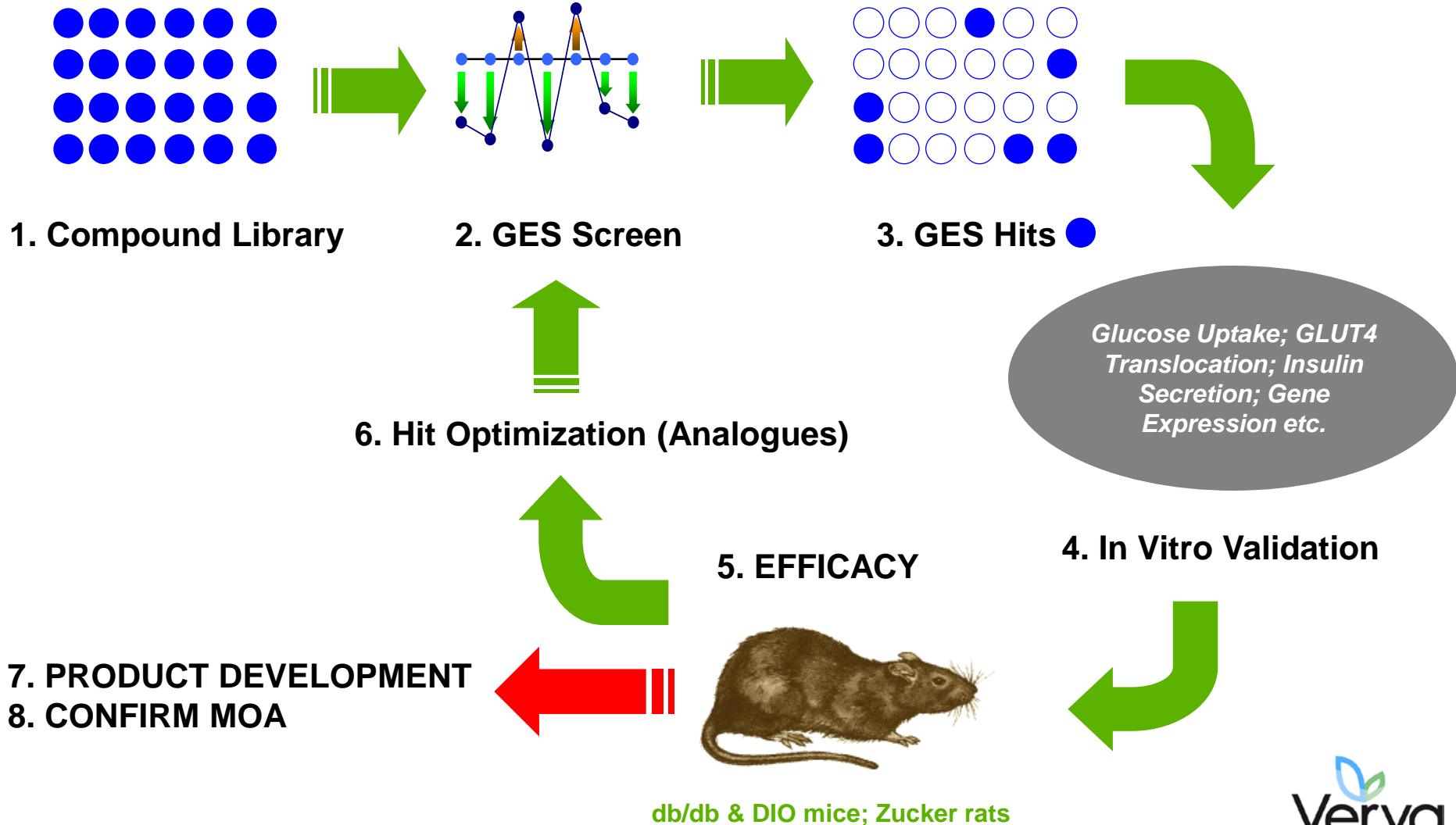
VVP808: A New Insulin Sensitizer

VVP808 Clinical Repurposing

- **50+ years of clinical use in an unrelated indication**
 - **Enzyme inhibitor**
 - **Only marketed US, Canada, Argentina**
 - **Established long-term safety profile**
 - **Limited current use; never evaluated as a diabetes therapy**
 - **No reported cardiovascular side-effects**

- **Diabetes activity is not due to the known enzyme inhibition**
 - **New insulin sensitizing target**
 - **Opportunity for dose and PK/PD differentiation**
 - **Avoid effects associated with known mode-of-action**

VVP808 Discovered using GES Platform



VVP808 Studies in DIO and *db/db* Mice

✓ VVP808 does:

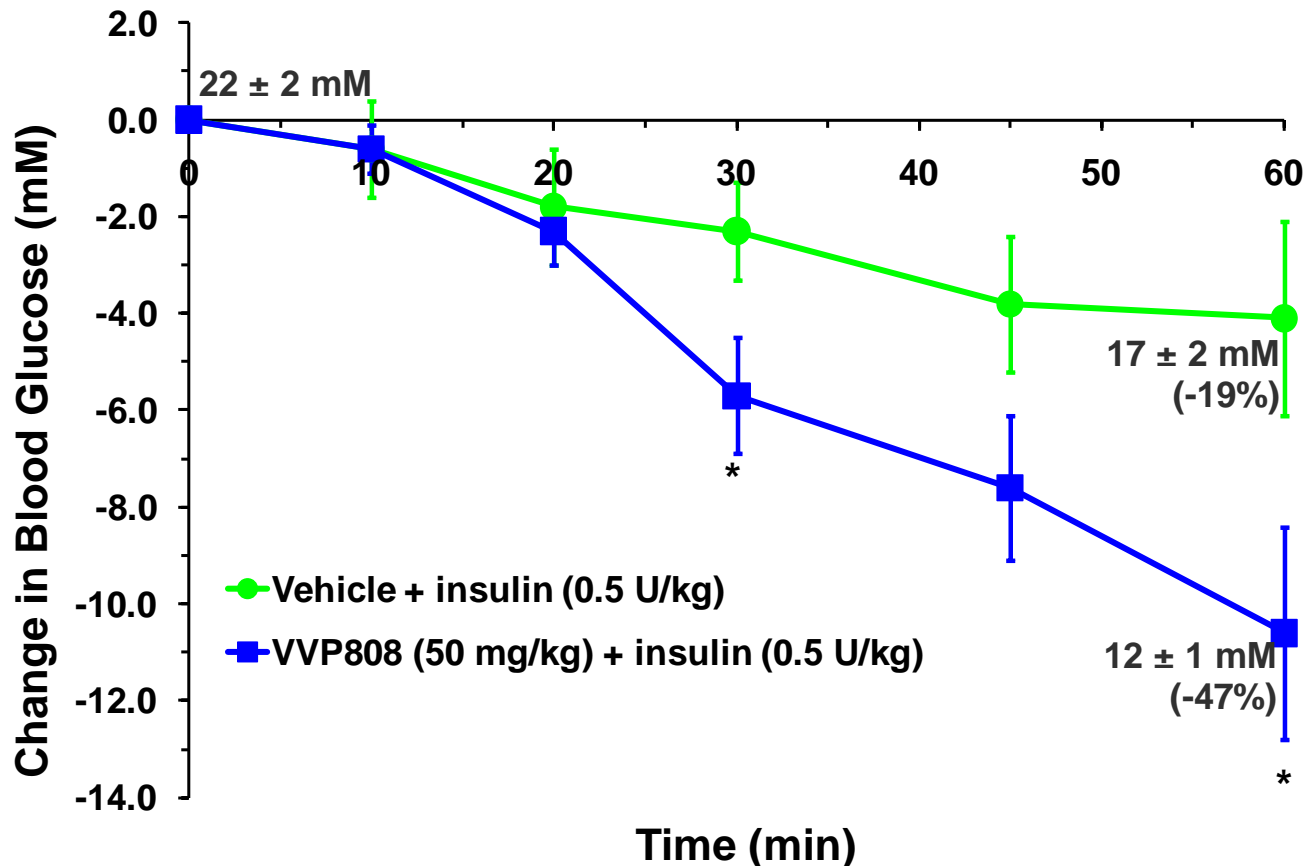
- ✓ Lower blood glucose
- ✓ Lower diabetes marker HbA_{1c} (~2%)
- ✓ Reduce hepatic glucose production (HGP)
- ✓ Require insulin for activity
 - May be synergistic with first-line therapy metformin

✗ VVP808 does not:

- ✗ Alter circulating insulin
- ✗ Alter glucose absorption, excretion or muscle uptake
- ✗ Alter mouse metabolic rate or ambulatory activity
- ✗ Impact known diabetes targets
 - PPAR α,γ , DPP4, IR tyrosine kinase, AMPK, or GSK3 β

VVP808 - A Novel Insulin Sensitizer

SD rats injected with STZ (60 mg/kg) to ablate insulin production then treated with oral VVP808 for 14 days



No effect in the absence of insulin

VVP808 Differentiators

Feature

VVP808 Advantage

****INSULIN SENSITIZER****



**NOT TZD structure,
NOT a PPAR modulator
Reduces HGP**

New mode-of-action



Novel insulin sensitizing target

Long history of clinical use



**Favourable safety profile
Improved with lower doses**

Additional benefits possible



**Weight and fat loss
Synergy with metformin**

Simple structure; low COGS



**Competitive, 'reimbursement
friendly' pricing at good margin**



VVP808-002 Clinical Trial

VVP808 Phase 2a Clinical Trial

- **Clinical proof-of-concept study in Type 2 diabetes**
 - Randomised, placebo-controlled, double-blinded, multi-centre
 - 80 patients
 - Not taking other diabetes medicines or only treated with metformin
- **One dose of VVP808 (40 mg b.i.d.)**
 - Low enough to avoid currently approved doses (50-100 mg b.i.d.)
 - High enough to demonstrate efficacy
 - Avoid known mode-of-action (safety); demonstrate dose differentiation (IP)
- **Objectives**
 - Reduction in HbA_{1c} vs. placebo after 24 weeks of treatment.
 - Fasting blood glucose; insulin sensitivity; BW, BP, lipids

VVP808-002 Phase 2a Clinical Trial

VVP808 (40 mg b.i.d.) oral capsules or placebo

VVP808
± MET

(n = 40)

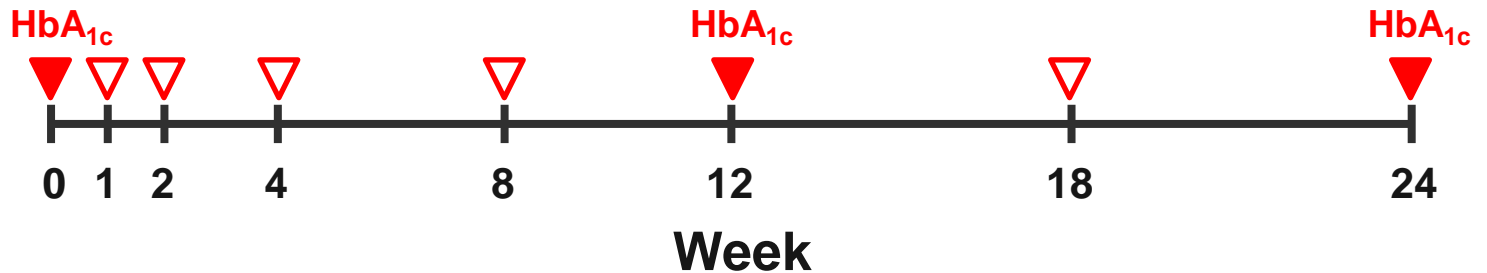


Placebo
± MET

(n = 40)



Patient
Visits &
Sampling



VVP808-002 Current Progress

- Study commenced February 2010

- Active at 5 sites in Australia

- Box Hill Hospital, Geelong Hospital, Heidelberg Repatriation Hospital (VIC)
 - Royal Adelaide Hospital (SA), Wesley Hospital (QLD)

- Current Status

- Screened 112
 - Randomized 58
 - Completed 32
 - Withdrawn/removed 6

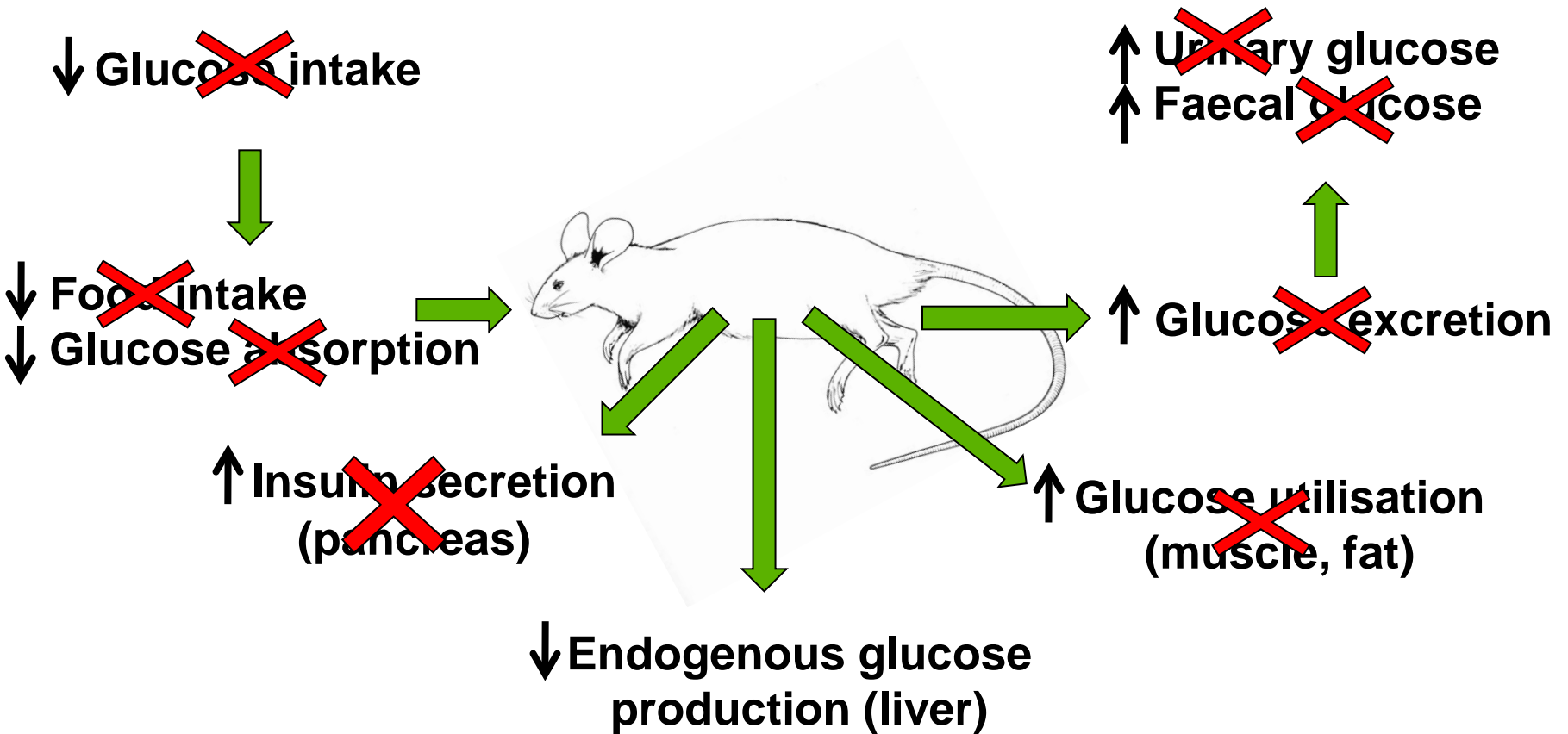
- Two nominally study-attributable AEs

- Nausea
 - Light-headedness/tingling



Preclinical Programs

VVP808 Mode-of-Action

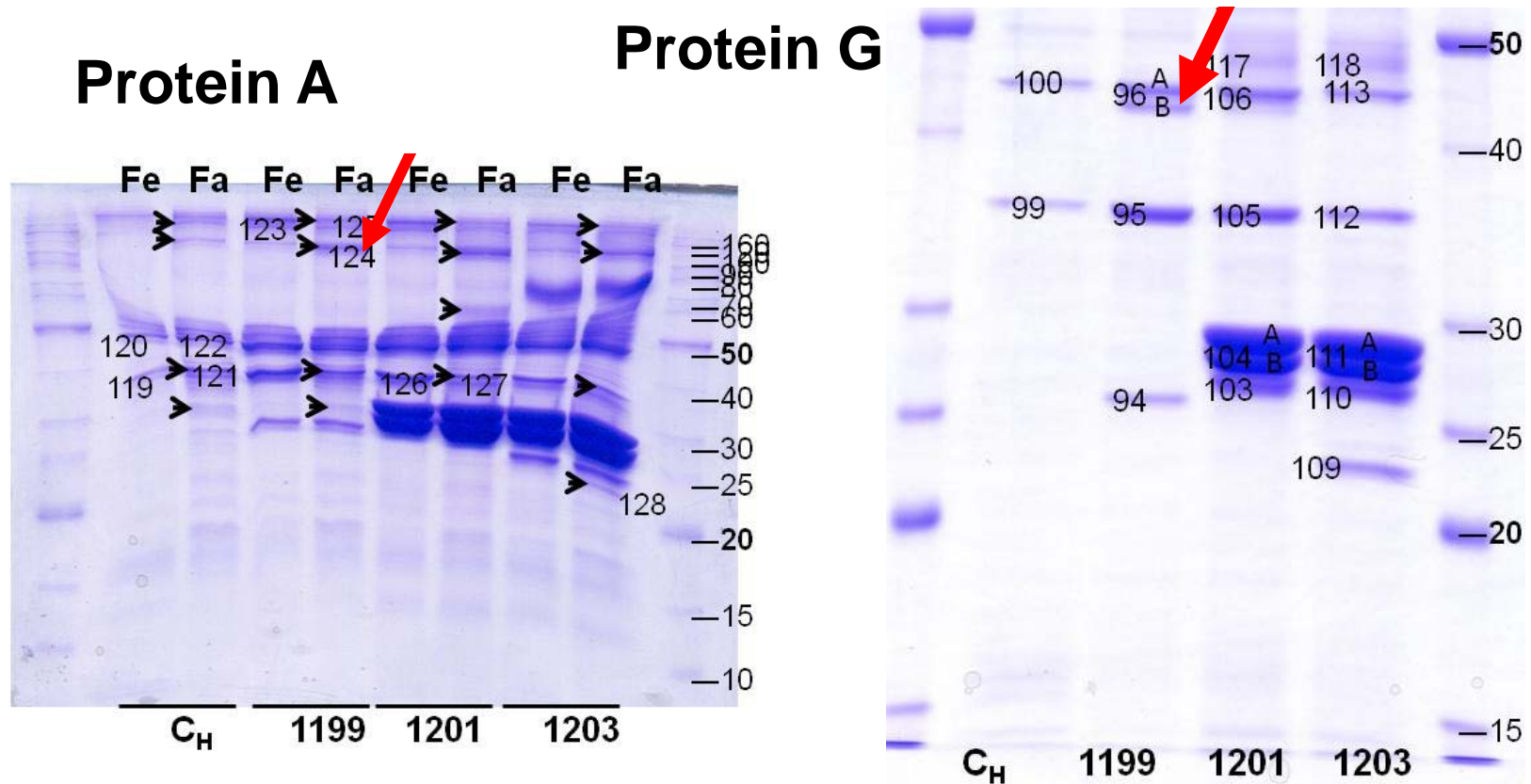


Novel Insulin Sensitizing Target

- VVP808 insulin sensitizing activity is not due to known mode-of-action
 - Related enzyme inhibitors did not lower blood glucose in animal models
- Target identification is a priority
 - Affinity chromatography studies have extracted 8 VVP808 binding proteins in liver extracts
 - On-going effort to confirm and validate target(s) *in vitro* and *in vivo*

Partnering discussions have identified that a novel insulin sensitizing target is a high value asset

VVP808: Diabetes Targets

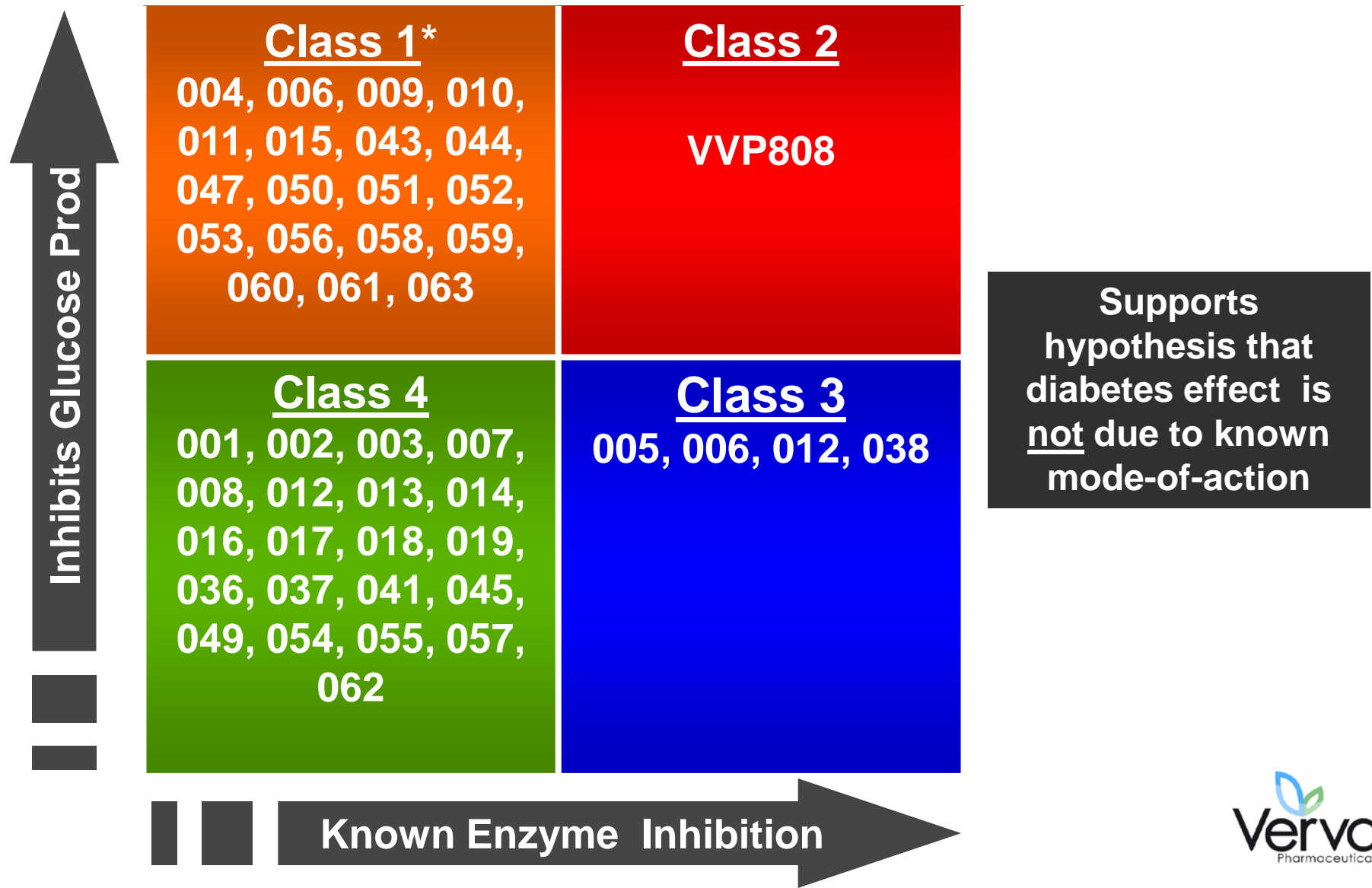


Hepatic proteins extracted by affinity chromatography

VVP100X Program

- **NCEs based on VVP808 structure & MOA**
 - **Optimize anti-diabetes effect against VVP808 diabetes target**
 - Engineer away from approved MOA; improve efficacy and safety
- **Longer time to market; longer term value proposition**
 - **Composition-of matter IP**
 - Program validated by success in VVP808 clinical trial
- **Current Progress**
 - **44 novel compounds synthesized from 7 different families**
 - Evaluated *in vitro* for inhibition of glucose production (FAO cells), known mode-of-action and cytotoxicity

VVP100X Preliminary Hit Stratification



VVP100X Work In Progress

■ Target discovery

- Evaluate target effects on glucose processing *in vitro*
- Evaluate modulation of targets by VVP808 *in vitro*
- siRNA knock-down of target *in vivo*
- Evaluate effect of VVP808 on target *in vivo* (mice)

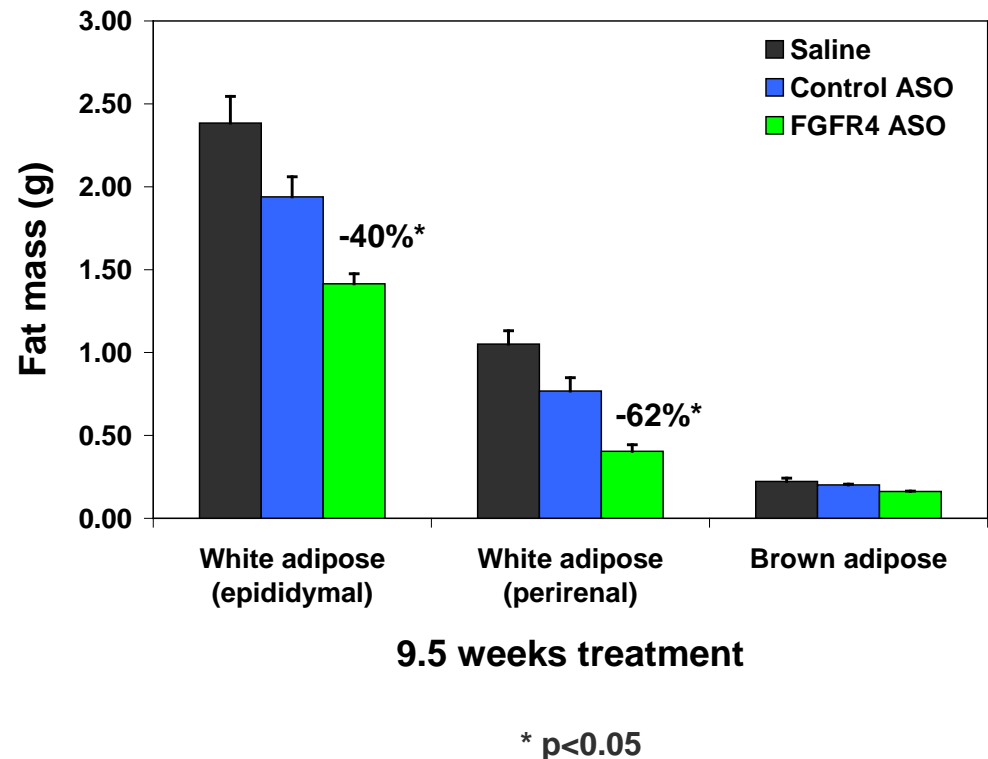
■ VVP100X

- Evaluate VVP100X effects on glucose processing *in vitro*
- Target assay development and screening
- SAR and IP reviews
- Evaluate effect of VVP100X on glucose *in vivo* (mice)

FGFR: Fat Blocking ASOs

- **FGF-1 is a potent promoter of adipogenesis**
 - Exerts its effects through multiple receptors (FGFRs)
- **Licensed aspects of Verva IP to ISIS Pharmaceuticals**
 - ISIS development pipeline 2011
 - **FGFR4 ASOs reduced body fat and weight in DIO mice**
 - No effect on food intake
 - Increased metabolic rate
 - Prevented fat gain in lean animals

**FGFR4 ASO (25 mg/kg s.c. q3d)
reduced body fat in DIO mice**





Value Proposition and Strategy

Verva Targeting an Exit in 2012

- **Strategic transaction**

- **Outright acquisition**
- **Merger with public or near public company in US or EU**
 - **Merged entity adds value prior to subsequent listing or acquisition**

- **Public Listing**

- **If market conditions and progress permit**
- **Will require meaningful development partnerships to enable portfolio advancement**
 - **Joint development, licensing or options on product programs**

Key Milestones & Newsflow

Event	Time
VVP100X leads identified (<i>in vitro</i>)	✓
Complete Financing	Q2'11
VVP808 Phase 2a study last patient first dose	Q2'11
VVP808 target identified (<i>in vitro</i>)	Q2/3'11
VVP100X target assay development & screening	Q3/4,11
VVP808 target mode-of-action confirmed (<i>in vivo</i>)	Q4'11
VVP100X glucose lowering efficacy (<i>in vivo</i>)	Q1'12
VVP808 Phase 2a study data (clinical)	Q1'12

High-value asset package directed to partnering, M&A

Verva Asset Portfolio Q1'12

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VVP100X	§				
GES Platform					
FGFR (obesity)	ASOs †				

If all goes according to plan...

* Safe use in diabetics patients; reduction in HbA_{1c}

‡ Target identified and relevance established in preclinical models

§ In vivo efficacy with a proprietary VVP808 analogue

† Progress dependent on partner

Verva Leadership Team

■ Board of Directors

- **Ian Nisbet, PhD (Chair)**

- Afandin Pty Ltd.; ex-Xenome, Millennium (Cambridge, MA), CSL

- **Andrew Baker, PhD**

- GBS Venture Partners; ex-Genentech, Bayer, J&J

- **Michael Cowley, PhD**

- Director of the Monash University Obesity & Diabetes Institute; ex-CSO Orexigen® Therapeutics Inc.

- **John Kurek, PhD**

- Uniseed; ex-BioDiem, Amrad

- **Kathy Nielsen, PhD**

- Queensland BioCapital Fund; ex-Xenome, ElaCor, IMBCom

■ CEO

- **Vince Wachter, PhD**

- 15 years US biotech; ex-Adipogen Pharmaceuticals (CEO), Eastman Chemical Co. (Kingsport TN), AvMax Inc. (San Francisco, CA)

Verva Expertise & Infrastructure



- Verva's founding laboratory
 - 10-year relationship
 - Ideal discovery partner
- Experienced scientific team
 - Decades of international metabolic diseases research
- Exceptional *in vitro* & *in vivo* capabilities
 - DIO mice/rats, *db/db* mice, Zucker rats, Israeli Sand Rats
- Verva Management & Board have extensive clinical trials experience