

## **INT41** for Huntington's Disease

November 2020

## **Vybion Team**

- Lee Henderson, PhD: has developed IND enabling processes for 12 biologic drugs in multiple therapeutic areas and actively manages licensing, M&A and IP for over 24 years.
- Martin Eglitis, PhD: has held positions as a Director of Teva Pharmaceuticals managing Venture Capital investments. Director or Senior Manager positions at Amgen, Eli Lilly and Genetic Therapy. Scientific background in Gene Therapy, Neurodegenerative diseases and corporate background in Licensing, Strategic Planning, Partner Agreement Negotiation, M&A and International Relationship Building.
- Joe Rininger, PhD: Latham Group Director of Cell and Gene Therapy where he specializes in AAV manufacturing. As the Senior Director, Influenza at Protein Sciences Corporation, Dr. Rininger was the program manager of a BARDA contract for the advanced development and commercialization of Flublok®.
- Marla Piercy, MS Regulatory professional with over 20 years of pharmaceutical industry experience (Genentech, Gilead, Adamas, CDC). Experienced with expedited review designations (breakthrough therapy, fast track), special populations, rare disease, and orphan drug indications, and INDs, NDAs, BLAs, MAAs. CTAs.
- Rick Hendrick, CFO has filled various financial management roles at US Steel, Baker Hughes, MMI Products and Hardinge, Inc. in addition to serving as a transitional CFO for a number of startup companies. His experience includes, financial forecasting, due diligence, M&A, private financings, risk management, SEC reporting and with a broad range of management and reporting responsibilities.

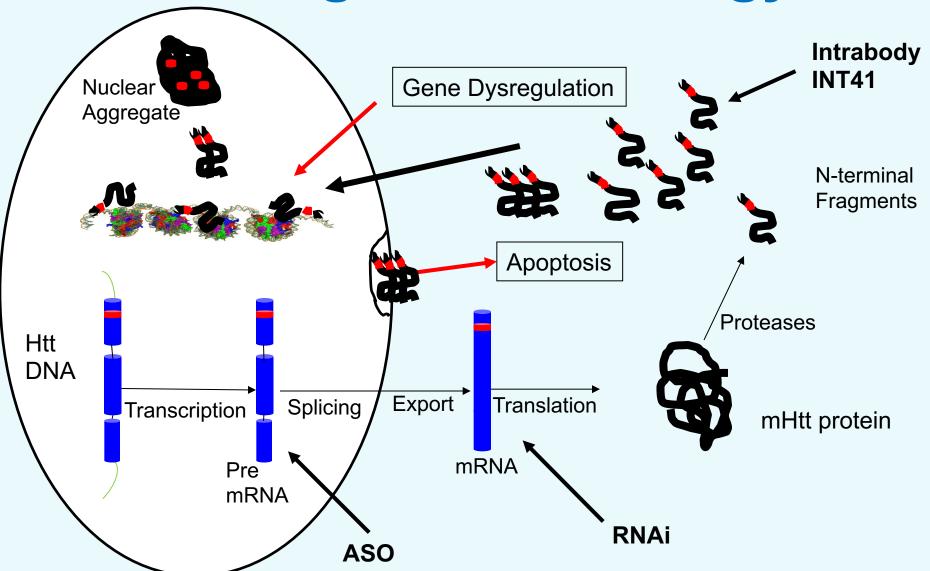


## **Vybion Pipeline**

Therapeutic Class	Target(s)	Drug & Project Stage
Huntington's Disease	Htt mutant protein	INT41 IND enabling (Orphan Disease Designation)
Spinobulbar Muscular Atrophy (SBMA)	Similar PolyQ protein disease with proline rich target sequence	INT41 R&D
Spinocerebellar Ataxia 1, 3 and 7 (SCA)	Similar PolyQ protein disease with proline rich target sequence	INT41 R&D
ALS & FTD	TDP43 (cytoplasmic accumulation of carboxy terminal fragment)	Planned



## **Huntington's Pathology**



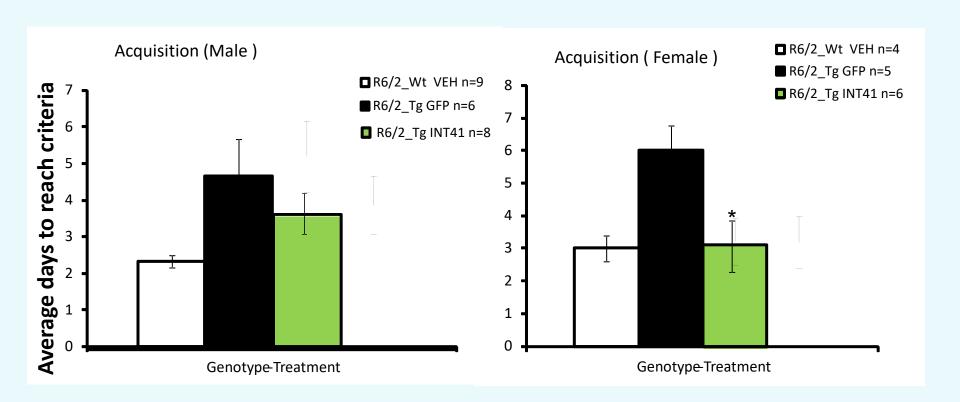


# **INT41 MOA** Nuclear Aggregate **INT41** Perinuclear Aggregate Hsc70 Autophagy Proteosome



#### INT41 R6/2 Animals Cognitive Function

(9-10 weeks)



'Cognitive assessment using the procedural T-Maze at 9-10 wks of age (4-5 wks post-rAAV infusion)

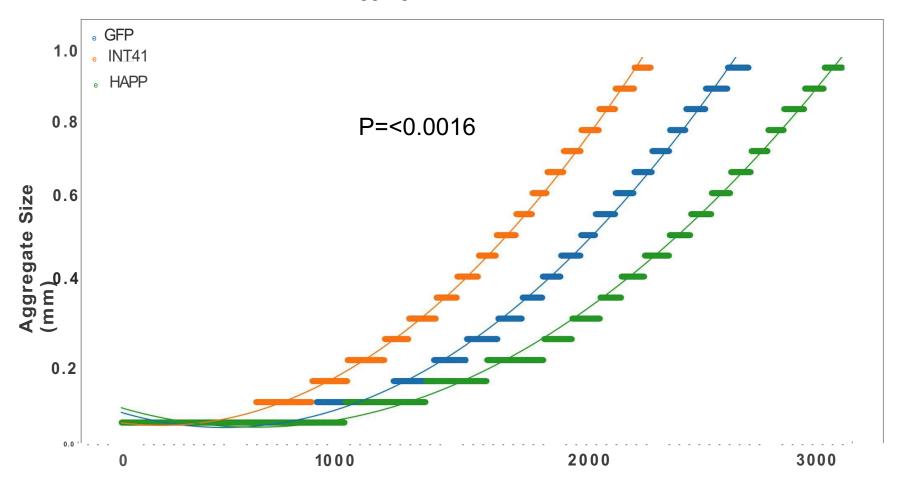
<sup>\*</sup> INT41 treated females are not statistically different from normal controls using Statview 2 way Anova & Kaplan-Meier analysis (all animal work done by Psychogenics)



### **INT41 Reduced Aggregate Formation**

(1st order regression and Bartlett analysis of variance)

Aggregate Formation in Female Mice



Number of Aggregates

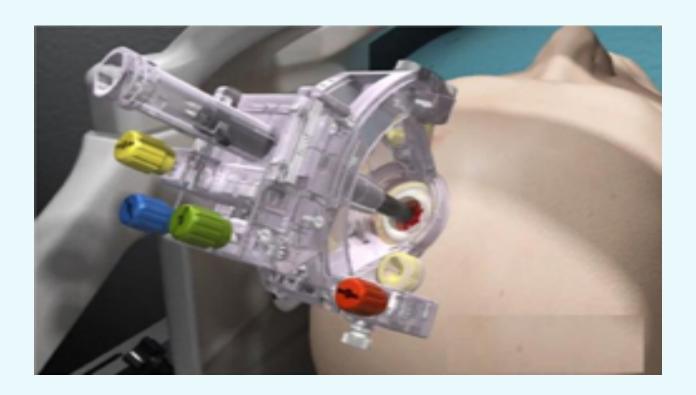
## **Key Takeaways**

- No toxicity (histology) observed in R6/2 model
- INT41 turned over in cell with no accumulation
- INT41 reduces binding of N-terminal Htt (Q73) to DNA to normal (Q23) levels
  - Reduction in gene dysregulation directly connects to DNA binding by N-terminal fragment(s)
- Inhibits aggregate formation
  - Increases rate of Htt degradation
- No off target effects (RNA arrays)
- INT41 does not bind to full length Htt protein
- INT41 may stabilize/alter fragment structure or conformation > fragment turnover



## **Convection Enhanced Delivery**

#### ClearPoint Device



Widespread AAV1- and AAV2-mediated transgene expression in the nonhuman primate brain: implications for Huntington's disease. Molecular Therapy — Methods & Clinical Development (2016) 3, 16037



## **Tox & Human POC Trial**

- Crossover and large animal tox
- Phase I/II POC human clinical trial
  - Dose escalating 46 patient safety trial
  - Bilateral delivery to caudate & putamen
  - Primary endpoints:
    - Safety & Tolerability
  - Secondary endpoints:
    - CSF huntingtin protein concentration (fM)
    - CSF neurofilament light chain (pg/mL)
    - Ventricular volume (mL)
    - Huntington's disease cognitive assessment battery composite score



### INT41 IP

- Divisional into three claim sets
- Issued in US (9,932,394), China, Europe,
  Canada and Australia
  - Composition
  - Epitope specificity
  - Huntingtin protein target
  - Filing continuance on remaining two claim sets
- Under examination in EU

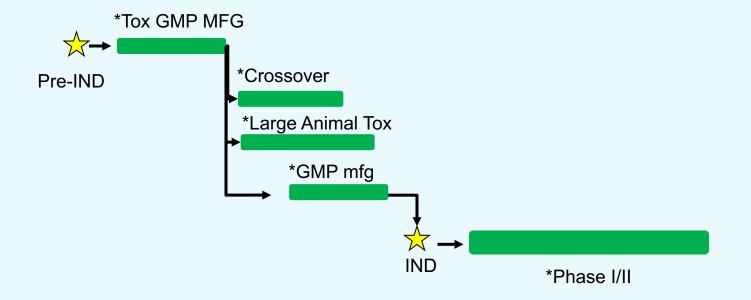
#### Potential Royalties:

 Vybion owns all IP (1% royalty on sales to Cornell University)



### **Timeline**









#### **CONTACT**

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