Ovid Therapeutics

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BOLDMEDICINE

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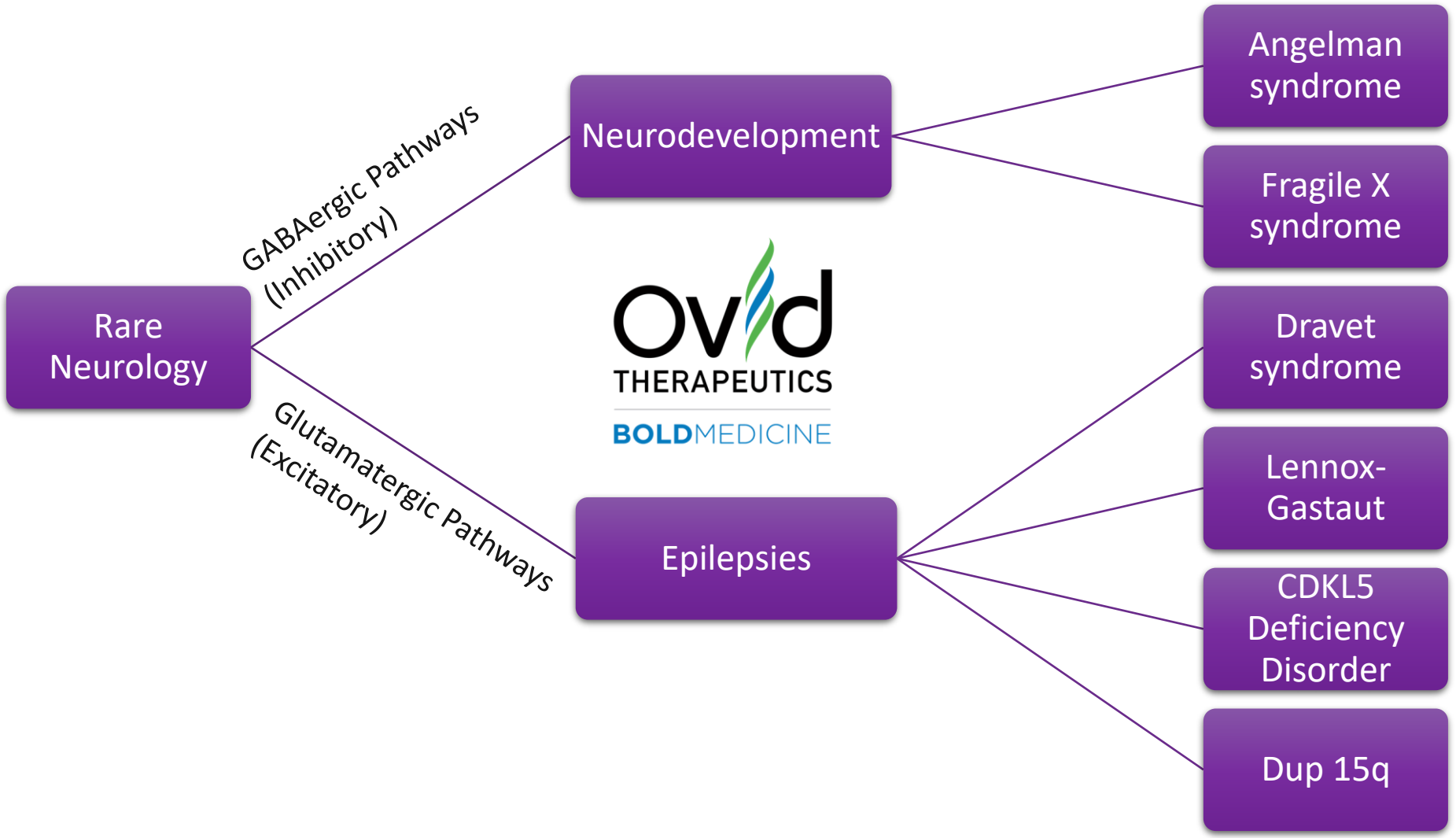
Ovid: Building a Leading Company in Neurology



Ovid Highlights

- OV101 – Neurodevelopment
  - First positive clinical result in Angelman Syndrome; OLE study enrolling (ELARA)
  - Phase 3 pivotal study of OV101 in Angelman Syndrome (NEPTUNE study, FPI expected 2H’19)
  - Phase 2 in Fragile X (ROCKET study, data expected 2H’19)
- OV935 – Developmental and Rare Epilepsies
  - Global 50:50 partnership with Takeda
  - Positive Phase 1b/2a reported December 2018; OLE study enrolling (ENDYMION)
  - Phase 2 studies for rare epilepsy types, including: Dravet, LGS (ELEKTRA) and Dup15q Syndrome and CDKL5 Deficiency Disorder (ARCADE)

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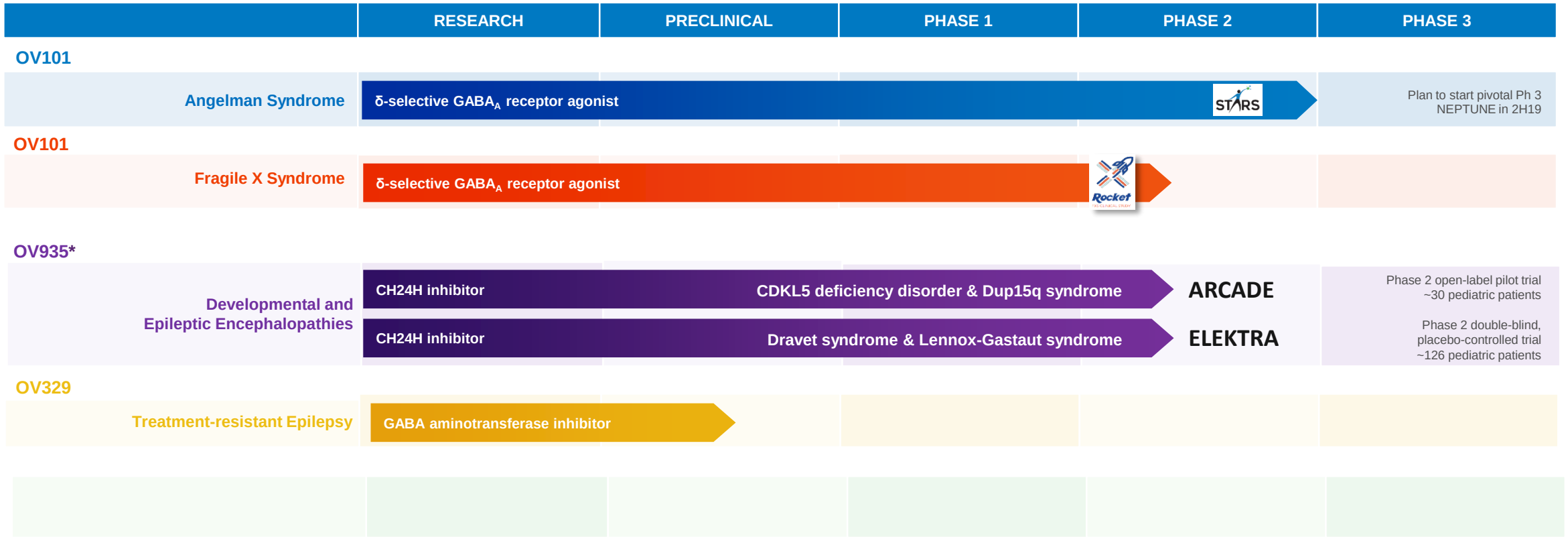
Focused Product Pipeline in Neurodevelopment and Epilepsies



- Also known as TAK-935. Co-development program with Takeda Pharmaceutical Company Limited pursuant to a license and collaboration agreement.
- Note: Ongoing open label extension studies include ELARA (Angelman Syndrome) and ENDYMION (Epilepsy types)

Angelman Syndrome: Orphan Drug & Fast Track Designations
Fragile X Syndrome: Orphan Drug & Fast Track Designations
DEE: Orphan Drug Designations for LGS and Dravet Syndrome

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OV935: First in Class Inhibitor of Brain Specific CH24H

- Unique, highly potent, orally administered, inhibitor of brain specific cholesterol 24-hydroxylase, with IP through 2032
- Positive Phase 1b/2a reported in December 2018
- Novel mechanism of action and acts through pathways that are not targets of other anti-epileptic drugs (AEDs)
  - Survival benefit in transgenic epilepsy models[1]
  - Anti-inflammatory and glial modulatory activity that may contribute to disease modification in animal models
  - Neuroprotection from glutamate toxicity[2]
- Potential for 24 Hydroxycholesterol to act as a plasma biomarker[3,4]

[1] Nishi, T et al. Poster 2018 [2] Hasegawa S, et al. Poster 2018 [3]Mast N, et al. *J Biol Chem*. 2017 [4]Sodero AO, et al. *EMBO J*. 2012.

Phase 1b/2a Trial Results: Appear to be Good Indicators of Efficacy and Safety Profile

Primary endpoints: Safety and Tolerability

- OV935 had a favorable safety profile and generally well tolerated; most AEs were mild

Secondary endpoints: Seizure frequency, 24HC and PK

Seizure Frequency

- 61% reduction in median seizure frequency observed at Day 92
  - Two of 11 patients became seizure-free during the last 28 days of treatment (to Day 92)
  - Drug-drug interaction effect with concomitant perampanel use

24HC

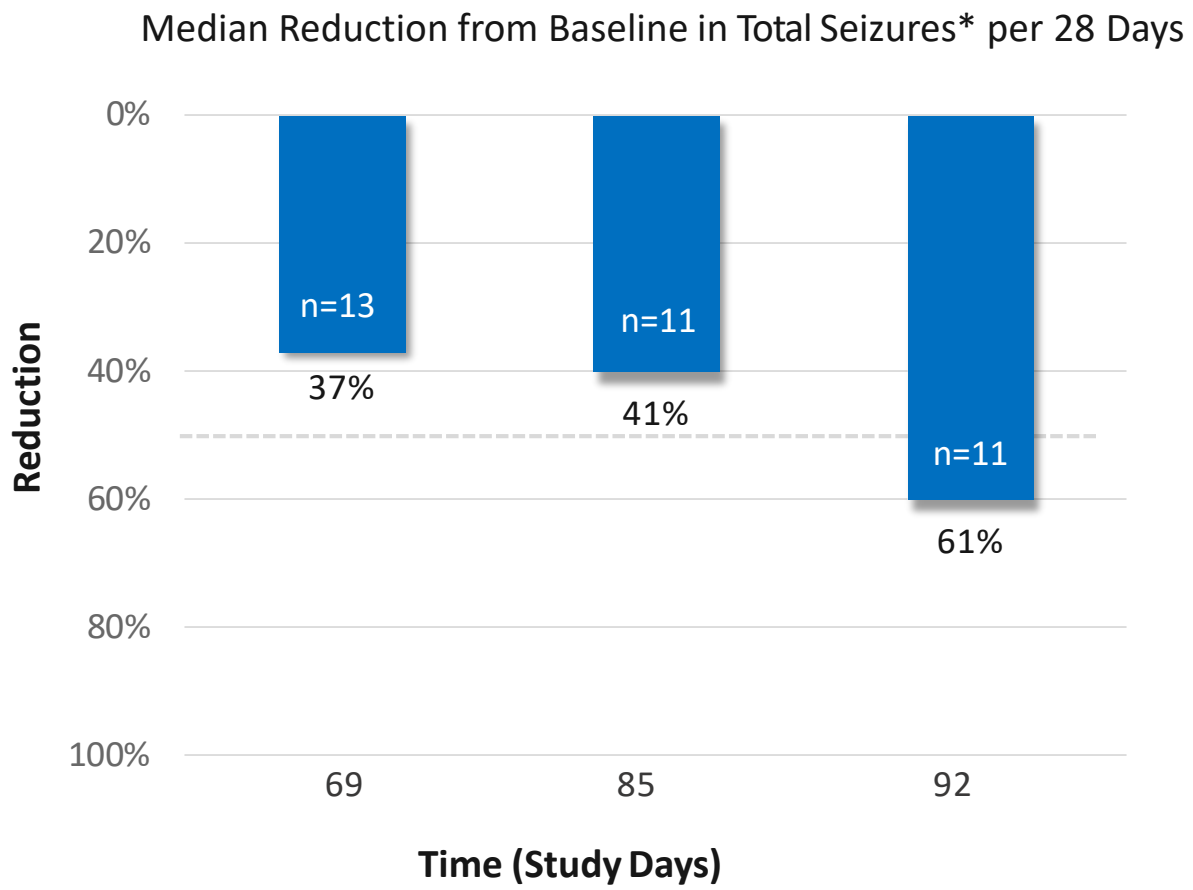
- Reduction of 24HC with OV935 treatment associated with decrease in seizure frequency over time
- Supports continued investigation of 24HC as a potential biomarker of target engagement

PK

- OV935 plasma levels were dose proportional

Source: Ovid press release on December 17, 2018

Phase 1b/2a: OV935 Appears to Progressively Reduce Seizure Frequency Over Time



*The total seizures are based on a period of 28 days on and prior to a specific study day; excludes patients on perampanel

Source: Ovid press release on December 17, 2018

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2019 Key Milestones

Angelman Syndrome OV101

- ❑ Finalize Phase 3 NEPTUNE protocol and submit to FDA (1H:19)
- ❑ Initiate NEPTUNE clinical trial (expected 2H:19)
- ❑ Continue enrollment in ELARA

Fragile X Syndrome OV101

- ❑ Complete enrollment in Phase 2 ROCKET trial
- ❑ Announce Phase 2 ROCKET trial data (expected 2H:19)
- ❑ Announce SKY ROCKET trial data (expected 2H:19)

DEE & Rare Epilepsies OV935*

- ❑ Complete enrollment in ARCADE (expected 2H:19)
- ❑ Continue enrollment in ELEKTRA
- ❑ Continue ENDYMION enrollment

Corporate

- ❑ Evaluate partnering opportunities that could accelerate development of OV101

*Also known as TAK-935. Co-development program with Takeda Pharmaceutical Company Limited pursuant to a license and collaboration agreement

Ovid Therapeutics: Our Inspiration to Succeed