Vision DMD: vamorolone drug development program for Duchenne muscular dystrophy

Guglieri, M.1; Storch, K. 2; Clemens, P.3; Cnaan, A.3; Damsker, J. 4; Gordish-Dressman , H.3; Morgenroth, L.3; Davis, R.1; Smith A. 3; Head R., Haberlova J., Demotes Mainard J. 5, Damsker J. 6, Nagaraju , K.7; Damsker J., 6, Nagaraju , K.7; Hathout , Y.7; Vroom, E.8, Bushby , K.1; Hoffman, E.8

1John Walton Muscular Dystrophy Research Centre, Newcastle University Newcastle upon Tyne UK; 2University of Pittsburgh School of Medicine and VA Pittsburgh Healthcare System, Pittsburgh, USA; 3TRINDS, Pittsburgh, USA; 4Ceratium; 5ECRIN; 6ReveraGen BioPharma, Rockville, USA; 7Children’s National Health System, Washington, USA; 8Duchenne Parent Project Groningen Netherlands

Duchenne Muscular Dystrophy

- Caused by mutation in the dystrophin gene
- Incidence of 1: 5000 male births
- Onset: age 2-4 years
- Progressive muscle weakness and wasting
- Cardiac and respiratory involvement

Characteristics of Vamorolone

- First-in-human dissociative steroid that has shown improved safety and efficacy in mouse models of Duchenne muscular dystrophy compared to corticosteroids.
- Preserves the anti-inflammatory actions of glucocorticoids
- Protects the muscle membrane
- Lacks transactivation sub-properties that may cause side effects of glucocorticoids, such as growth restriction and osteopenia

Phase I Study Results

- Pharmacokinetic data in single and multiple ascending doses up to 20 mg/kg/day for 14 days. Study in healthy adult volunteers shows strong adherence to dose linearity and dose proportionality.
- No drug accumulation was observed, consistent with the short half-life.
- No adverse events precluding further escalations in dosing observed.

Phase IIa Study

- 12 sites: USA (6), Canada (1), UK (1), Australia (2), Israel (1), Sweden (1)
- Multiple ascending dose-finding and safety study
- Inclusion Criteria: 4-7 year old DMD
- Exploratory Muscle MRI protocol to assess feasibility in a large study
- 24-weeks treatment followed by 6 month extension

DMD Clinical Development Plan- Phase IIb Study

- 30 sites: EU (18), USA (6), Canada (3), Australia (2), Israel (1)
- Randomized, placebo-controlled study including steroid and placebo arms
- Inclusion Criteria: 4-18 year old DMD
- 24-weeks treatment followed by 6 month extension
- Exploratory Muscle MRI protocol to assess feasibility in a large study
- Expected recruitment start: August 2017

Projected Vamorolone Drug Development Timeline