Technology Offer

S- Oxprenolol for treating amyotrophic lateral sclerosis (ALS)

Ref. No.: CH589

Background

Amyotrophic lateral sclerosis (ALS) is one of the most common neurodegenerative disorders characterized by progressive muscular paralysis reflecting degeneration of motor neurons in the brain and spinal cord. 5-10% of patients have positive family history of ALS, mostly with autosomal dominant inheritance pattern. ALS is a disease of mature adults, with median age of onset of 55 years and its frequency increases with age until age of 75. 50% patients die within the first three years since the first clinical manifestion. Riluzole, approved for treating ALS, delays the onset of ventilator dependence and may prolong life by two to three months. Nevertheless, there is a high medical need for novel drug candidates improving survival and reducing waste of musle and body weight.

Technology

S-Enantiomer enriched compositions of beta blockers, in particular S-Oxprenolol have been shown to be good drug candidates for treating ALS. Treatment of ALS-mice (animal model SOD G93A) with 10mg/kg/d S-Oxprenolol promotes a prolongation of survival life time by 33% compared to placebo treated mice (survival 56 vs. 42 days after onset). Further on, the waste of muscle, the body lean mass and body mass can be reduced after disease onset, as well as the daily fat mass lost. Moreover, S-Oxprenolol (20mg/kg/d) treated ALS-mice significantly survive longer than higher dosed ALS-compound Riluzole (30 mg/kg/d)- treated mice (80 days vs. 76 days). S-Oxprenolol is also superior to either R-Oxprenolol or racemate Oxprenolol comprising both enantiomers (80 days survival vs. 76 or 77 days survival).

Benefits

- ✓ Improved survival compared to Riluzole
- ✓ Muscle loss can be delayed
- ✓ S-Oxprenolol is lipophilic and is able to cross the blood-brain much easier than other beta blockers

Application

Treatment of ALS

Commercial Opportunity

Searching for a licensing or developing partner

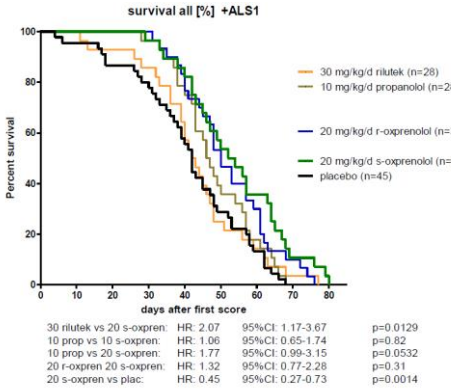

Fig. 1: S-Oxprenolol treated ALS-mice live longer than placebo treated or Riluzole treated mice.

Key words

ALS, amyotrophic lateral sclerosis, S-Oxprenolol, beta-blocker, enantiomer, neurodegenerative disorder

Developmental Status

I In vivo (ALS mouse model)

IP Status

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PCT application filed 03/2014

EP and US applications pending

publication here

Patent Owner

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