acamprosate, baclofen, cinacalcet, mexiletine, sulfisoxazole and torasemide, or a salt, prodrug, derivative of any chemical purity, or sustained-release formulation thereof.

A further object is a method for treating ALS or a related disorder in a subject in need thereof, comprising administering to the subject at least two drugs selected from acamprosate, baclofen, cinacalcet, mexiletine, sulfisoxazole and torasemide, or a salt, prodrug, derivative of any chemical purity, or sustained-release formulation thereof.

Preferred examples of drug combinations include, *e.g.*, baclofen and acamprosate; torasemide and baclofen; baclofen and cinacalcet; torasemide and sulfisoxazole; mexiletine and cinacalcet; or baclofen and acamprosate and torasemide.

In a particular embodiment , the composition further comprises riluzole, or a salt, prodrug, derivative of any chemical purity, or sustained-release formulation thereof.

The disclosed compositions may further comprise one or several pharmaceutically acceptable carrier(s) or excipient(s), and they may be administered repeatedly to the subject. Preferred compositions are administered orally. Moreover, the drugs may be formulated or administered together, separately or sequentially.

The disclosure is suitable for treating ALS in any mammalian subject, particularly in a human subject, at any stage of the disease. The disclosure may be used to retard the development of the disease, to reduce, delay or prevent paralysis, motor neuron degeneration and/or pain, and/or to increase survival.

In one aspect, there is provided the use of a composition comprising acamprosate and baclofen, or ~~a~~ salt(s) thereof, ~~a prodrug, a~~ or derivatives thereof having a Tanimoto similarity index with acamprosate or baclofen greater than 0.4~~of any chemical purity~~ or ~~a~~ sustained-release formulation(s) thereof, in the manufacture of a medicament, for treating ALS or a related disorder in a subject in need thereof.

In another aspect, there is provided the use of acamprosate, or a salt thereof, ~~a prodrug, or~~ a derivative thereof having a Tanimoto similarity index with acamprosate greater than 0.4~~of any chemical purity~~, or a sustained-release formulation thereof, in the manufacture of a medicament for treating ALS or a related disorder, wherein said medicament is to be administered in combination with baclofen, or a salt thereof, ~~prodrug,~~or a derivative thereof having a Tanimoto similarity index with baclofen greater than 0.4~~of any chemical purity~~, or a sustained-release formulation thereof.

In still another aspect, there is provided the use of acamprosate, or ~~a~~ salt thereof, ~~a prodrug, or~~ a derivative thereof having a Tanimoto similarity index with acamprosate greater than 0.4~~of any chemical purity~~, or a sustained-release formulation thereof, in the manufacture of a medicament for treating ALS or a related disorder, wherein said medicament is to be administered in combination with baclofen and riluzole, or ~~a~~ salt(s) thereof, ~~prodrug, or~~ derivative(s) thereof having a Tanimoto similarity index with baclofen or riluzole greater than 0.4 ~~of any chemical purity~~, or sustained-release formulation(s) thereof.

## LEGEND TO THE FIGURES

**Figure 1:** Effect of baclofen and acamprosate combination therapy against glutamate toxicity on neuronal cortical cells. Glutamate intoxication is significantly prevented by

# CLAIMS

1. Use of a composition comprising acamprosate and baclofen, or ~~a~~ salt(s) thereof, ~~a prodrug, or a~~ derivative(s) thereof having a Tanimoto similarity index with either acamprosate or baclofen greater than 0.4, ~~of any chemical purity~~ or ~~a~~ sustained-release formulation(s) thereof, in the manufacture of a medicament, for treating ALS or a related disorder in a subject in need thereof.

2. The use of claim 1, wherein the composition further comprises ~~at least one of the following drug combinations~~:
   ~~baclofen and acamprosate~~,
   ~~baclofen and acamprosate and~~ torasemide or a salt thereof, ~~prodrug, or a~~ derivative thereof having a Tanimoto similarity index with torasemide greater than 0.4, ~~of any chemical purity,~~ or a sustained-release formulation thereof.

3. The use of claim 1 or 2, wherein the composition further comprises riluzole, or a salt thereof, ~~prodrug, or a~~ derivative thereof having a Tanimoto similarity index with riluzole greater than 0.4, ~~of any chemical purity,~~ or a sustained-release formulation thereof.

4. The use of any one of the preceding claims, wherein the medicament further comprises a pharmaceutically acceptable carrier or excipient.

5. The use of any one of the preceding claims, wherein the compounds of said composition are formulated or administered together, separately or sequentially.

6. The use of any one of the preceding claims, wherein said medicament is to be administered repeatedly to the subject.

7. The use of any one of claims 3 to 6, wherein riluzole is to be administered in a dosage from 0.1 to 50 mg per day.

8. The use of any one of claims 1 to 7, wherein acamprosate is to be administered in a dosage of less than 50 mg per day, more preferably less than 10 mg per day.

9. The use of any one of claims 1 to 8, wherein baclofen is to be administered in a dosage of less than 30 mg per day.

10. The use of any one of the preceding claims, wherein said medicament is to be administered orally.

11. The use of any one of the preceding claims, wherein said medicament is to be administered orally and repeatedly every other day, alternately with riluzole.

12. The use of any one of the preceding claims, wherein the compounds of said composition are formulated together.

13. Use of acamprosate, or a salt thereof, ~~a prodrug, or~~ a derivative thereof having a Tanimoto similarity index with acamprosate greater than 0.4, ~~of any chemical purity,~~ or a sustained-release formulation thereof, in the manufacture of a medicament for treating ALS or a related disorder, wherein said medicament is to be administered in combination with baclofen, or a salt thereof, ~~prodrug, or a~~ derivative thereof having a Tanimoto similarity index with baclofen greater than 0.4~~of any chemical purity~~, or a sustained-release formulation thereof.

14. Use of acamprosate, or a salt thereof, ~~a prodrug,~~ a derivative thereof having a Tanimoto similarity index with acamprosate greater than 0.4~~of any chemical purity~~, or a sustained-release formulation thereof, in the manufacture of a medicament for treating ALS or a related disorder, wherein said medicament is to be administered in combination with baclofen and riluzole, or ~~a~~ salt(s) thereof, ~~prodrug, or~~ derivatives thereof having a Tanimoto similarity index with either baclofen or riluzole greater than 0.4 ~~of any chemical purity~~, or sustained-release formulation(s) thereof.