

CLAIMS

What is claimed is:

1. Use of a modulator of one or more TRIM proteins in the manufacture of a pharmaceutical composition for treating or preventing a disease or disorder associated with misfolded protein or protein aggregates in a subject.
2. The use of claim 1, wherein the modulator increases the expression or activity of the one or more TRIM proteins.
3. The use of claim 1 or 2, wherein the modulator is at least one of the group consisting of a chemical compound, a protein, a peptide, a peptidomimetic, an antibody, a ribozyme, a small molecule chemical compound, a nucleic acid, a vector, and an antisense nucleic acid.
4. The use of any one of claims 1 to 3, wherein the modulator increases the expression or activity of at least one selected from the group consisting of human TRIM11, TRIM3, TRIM4, TRIM5, TRIM6, TRIM7, TRIM9, TRIM11, TRIM13, TRIM14, TRIM15, TRIM16, TRIM 17, TRIM19 (also referred to herein as "PML"), TRIM20, TRIM21, TRIM24, TRIM25, TRIM27, TRIM28, TRIM29, TRIM32, TRIM34, TRIM39, TRIM43, TRIM44, TRIM45, TRIM46, TRIM49, TRIM50, TRIM52, TRIM58, TRIM59, TRIM65, TRIM67, TRIM69, TRIM70, TRIM74 and TRIM75; and mouse TRIM30
5. The use of any one of claims 1 to 4, wherein the pharmaceutical composition comprises an isolated peptide comprising one or more TRIM proteins.
6. The use of claim 5, wherein the isolated peptide further comprises a cell penetrating peptide (CPP) to allow for entry of the isolated peptide into a cell.
7. The use of claim 6, wherein the CPP comprises the protein transduction domain of HIV tat.

8. The use of any one of claims 1 to 7, wherein the pharmaceutical composition comprises an isolated nucleic acid molecule encoding one or more TRIM proteins.
9. The use of claim 8, wherein the pharmaceutical composition comprises an adeno-associated viral (AAV) vector comprising the isolated nucleic acid molecule encoding one or more TRIM proteins.
10. The use of claim 9, wherein the pharmaceutical composition comprises an AAV9 vector comprising the nucleic acid molecule encoding one or more TRIM proteins.
11. The use of any one of claims 1 to 10, wherein the disease or disorder is a polyQ disorder.
12. The use of any one of claims 1 to 11, wherein the disease or disorder is a neurodegenerative disease or disorder selected from the group consisting of Spinocerebellar ataxia (SCA) Type 1 (SCA1), SCA2, SCA3, SCA6, SCA7, SCA17, Huntington's disease, Dentatorubral-pallidoluysian atrophy (DRPLA), Alzheimer's disease, Parkinson's disease, amyotrophic lateral sclerosis (ALS), a transmissible spongiform encephalopathy (prion disease), a tauopathy, and Frontotemporal lobar degeneration (FTLD).
13. The use of any one of claims 1 to 12, wherein the disease or disorder is selected from the group consisting of AL amyloidosis, AA amyloidosis, Familial Mediterranean fever, senile systemic amyloidosis, familial amyloidotic polyneuropathy, hemodialysis-related amyloidosis, ApoAI amyloidosis, ApoAII amyloidosis, ApoAIV amyloidosis, Finnish hereditary amyloidosis, lysozyme amyloidosis, fibrinogen amyloidosis, Icelandic hereditary cerebral amyloid angiopathy, type II diabetes, medullary carcinoma of the thyroid, atrial amyloidosis, hereditary cerebral hemorrhage with amyloidosis, pituitary prolactinoma, injection-localized amyloidosis, aortic medial amyloidosis, hereditary lattice corneal dystrophy, corneal amyloidosis associated with trichiasis, cataract, calcifying epithelial odontogenic tumor, pulmonary alveolar proteinosis, inclusion-body myostitis, and cutaneous lichen amyloidosis.

14. The use of any one of claims 1 to 13, wherein the disease or disorder is cancer associated with p53 mutant aggregates.

15. The method of claim 13, wherein the disease or disorder is cancer associated with p53 mutant aggregates.

16. The use of any one of claims 1 to 12, wherein the pharmaceutical composition is to be administered to at least one neural cell of the subject.

17. Use of a modulator of one or more TRIM proteins in the manufacture of a pharmaceutical composition for treating or preventing a disease or disorder associated with degradation of functional mutant protein in a subject.

18. The use of claim 17, wherein the modulator increases the expression or activity of the one or more TRIM proteins.

19. The use of claim 17 or 18, wherein the modulator is at least one of the group consisting of a chemical compound, a protein, a peptide, a peptidomimetic, an antibody, a ribozyme, a small molecule chemical compound, a nucleic acid, a vector, and an antisense nucleic acid.

20. The use of any one of claims 17 to 19, wherein the disease or disorder is cystic fibrosis.

21. Use of a modulator of one or more SUMO-targeted ubiquitin ligase (STUbL) in the manufacture of a pharmaceutical composition for treating or preventing a disease or disorder associated with misfolded protein or protein aggregates...

22. The use of claim 21, wherein the modulator increases the expression or activity of one or more STUbLs.

23. The use of claims 21 or 22, wherein the modulator is at least one of the group consisting of a chemical compound, a protein, a peptide, a peptidomimetic, an antibody, a ribozyme, a small molecule chemical compound, a nucleic acid, a vector, and an antisense nucleic acid.

24. The use of any one of claims 21 to 23, wherein the modulator increases the expression or activity of RNF4.

25. An *in vitro* method for producing a recombinant protein comprising administering a modulator of one or more TRIM proteins to cell modified to express a recombinant protein.

26. The method of claim 25, wherein the modulator comprises an isolated peptide comprising one or more TRIM proteins.

27. The method of claim 25 or 26, wherein the modulator comprises an isolated nucleic acid molecule encoding one or more TRIM proteins.