CLAIMS

What is claimed is:

1. A modified eukaryotic translation initiation factor 4 gamma 1 (eIF4G1) peptide derived from the human eIF4G1 protein with the amino acid sequence SEQ ID NO. 8, wherein the eIF4G1 peptide has been modified to stabilize the α-helix, wherein:

(i) the modified eIF4G1 peptide comprises the amino acid sequence KRYDREFLL*FQF(SEQ ID NO: 12) or RYDREFLL*FQF(SEQ ID NO: 13), wherein "*" in the sequences represents a cycloalkane derivative; or

(ii) the modified eIF4G1 peptide is selected from the group consisting of Tr2_AIB3_A5C (SEQ ID NO: 28), Tr2_me5_1 (SEQ ID NO: 36), eIF4G1_me5 (SEQ ID NO: 39), TAT_eIF4G1_me5 (SEQ ID NO: 42), GT_eIF4G1_me5 (SEQ ID NO: 46), Ac 16 (Ac-G-T-K-K-R-Y-D-R-E-*-L-L-5-F-Q-F(SEQ ID NO:46)-NH2), Ac15 (Ac-T-K-K-R-Y-D-R-E-*-L-L-5-F-Q-F(SEQ ID NO: 48)-NH2), and Ac14 (Ac-K-K-R-Y-D-R-E-*-L-L-5-F-Q-F(SEQ ID NO: 39)-NH2), wherein "5" in the sequences refers to 1-aminocyclopentanoic acid and "*" in the sequences represents a cycloalkane derivative.

2. The modified eIF4G1 peptide of claim 1, wherein the modified eIF4G1 peptide comprises a sequence selected from the group consisting of KRYDREFLL*FQF(SEQ ID NO: 12)-NH2 and RYDREFLL*FQF(SEQ ID NO: 13)-NH2, wherein "*" in the sequences represents a cycloalkane derivative.

3. The modified eIF4G1 peptide of any one of claims 1 or 2, wherein the modified eIF4G1 peptide comprises a protection group.

4. The modified eIF4G1 peptide of claim 3, wherein the protection group is an acyl or acetyl group.

5. The modified eIF4G1 peptide of any one of claims 1 to 4, wherein the modified eIF4G1 peptide comprises capping groups at the N-terminus and/or the C-terminus.

6. The modified eIF4G1 peptide of any one of claims 1 to 5, wherein the cycloalkane derivative is selected from the group consisting of 1-aminocyclopentanoic acid, 1-

aminocyclohexanoic acid, β-cyclohexylalanine, an α-(1-carboxycyclopentyl)glycine, 1-aminocyclopropanoic acid, 1-amino cyclobutanoic acid and aminomethylcyclohexanoic acid.

7. The modified eIF4G1 peptide of any one of claims 1 to 6, wherein the modified eIF4G1 peptide comprises an N-terminus which is modified.

8. The modified eIF4G1 peptide of any one of claims 1 to 7, wherein the modified eIF4G1 peptide comprises a C-terminus which is modified.

9. A pharmaceutical composition comprising a modified eIF4G1 peptide of any one of claims 1 to 8.

10. Use of a modified eIF4G1 peptide according to any one of claims 1 to 8 or a pharmaceutical composition according to claim 9, for the manufacture of a medicament for the treatment of autism and cancer.

11. The use of claim 10, wherein the cancer is selected from the group consisting of breast cancer, lung cancer, head and neck cancer, esophagus cancer, skin cancer, bladder cancer, colon cancer, cervix cancer and prostate cancer.