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(54) Title: HIGH MAST2-AFFINITY POLYPEPTIDES AND USES THEREOF

(57) Abstract: The invention relates to polypeptides containing a cytoplasmic domain ending with a MAST-2 binding domain, from 11 to 13 residues, the first two residues of which are S and W, and the last four residues of which are Q, T, R and L, said polypeptides presenting a high affinity for the PDZ domain of the human MAST2 protein. The invention also relates to polynucleotides, vectors, lentiviral particles, cells as well as compositions comprising the same. The invention is also directed to the use of said polypeptides, polynucleotides, vectors, lentiviral particles, cells and compositions in the treatment and/or prevention of a disease, disorder or condition, which alters the Central Nervous System (CNS) and/or the Peripheral Nervous System (PNS). The invention also concerns molecular signatures of cellular genes to determine the neurosurvival and/or neuroprotection activity of a molecule.

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