

CLAIMS

1. A gSAP peptide selected from the following:
 - c. a peptide comprising the sequence Seq ID No. 7 (LWDHPMSSNIISR) and/or Seq ID No. 8 (NHVTRLLQNYKK),
 - ~~e. gSAP from any mammalian species, for example mouse, rat or monkey,~~
 - ~~f. a fragment of gSAP capable of forming a complex with gamma secretase,~~wherein the gSAP peptide is isolated or separated from its natural environment.
2. A gSAP peptide according to claim 1 which is produced by a recombinant cell, e.g., selected from a bacterial cell, a baculovirus or a mammalian cell.
3. A vector comprising a gene for encoding a gSAP peptide according to claim 1 operably linked to a heterologous promoter.
4. A transgenic cell containing a heterologous gene which expresses a gSAP peptide according to claim 1.
5. A nucleic acid which is or which expresses a RNA construct capable of inhibiting expression of a gSAP peptide according to claim 1 in a mammalian cell.
6. An antibody to a gSAP according to claim 1.
7. A vaccine comprising an immunogenic fragment of a gSAP peptide according to claim 1 in combination with a suitable adjuvant and/or carrier.
8. A non-human gSAP knockout mammal, wherein its gene for gSAP is disrupted, and wherein said gSAP is a gSAP peptide according to claim 1.
- ~~9. Use of a gSAP peptide according to claim 1 in an assay to identify compounds which inhibit A β deposition~~
- ~~10. A method of identifying a compound inhibiting A β deposition, comprising measuring binding of a test compounds to a gSAP peptide according to claim 1.~~

- ~~11. A derivative of imatinib wherein the methylpiperiziny moiety of imatinib is substituted or modified with a labeling group.~~
- ~~12. The derivative of claim 11 selected from photolabeled derivatives, radiolabeled derivatives and biotinylated derivatives.~~
- ~~13. A method of identifying persons at risk of developing Alzheimer's disease comprising checking for elevated expression levels and/or mutations in gSAP relative to normal values as identified using a control population.~~
- ~~14. A method for inhibiting the accumulation of abnormal protein aggregates in a warm-blooded animal in need of such inhibition which comprises an effective amount of a compound to inhibit the activity of a gSAP peptide according to claim 1 administered to said animal.~~
- ~~15. An effective amount of a compound to inhibit the activity of a gSAP peptide according to claim 1 for use in the treatment of Alzheimer's disease, progressive supranuclear palsy, Down Syndrome, memory and cognitive disorders, dementia, amyloid neuropathies, brain inflammation, nerve and brain trauma, vascular amyloidosis, cerebral hemorrhage with amyloidosis, Parkinson's disease, Huntington's disease, prion disease and/or vascular, neurological, and/or neurodegenerative disorders related to the abnormal expression or accumulation of tau or amyloid proteins such as A β .~~
- ~~16. The method of claim 14 or 15 wherein the compound to inhibit gSAP activity is selected from small molecules, inhibitory RNA molecules, vectors and cells producing inhibitory RNA molecules, antibodies to gSAP, and vaccines for gSAP.~~
- ~~17.9. A gSAP peptide according to claim 1 which has been labeled.~~
- ~~18. A method of identifying a candidate for treatment with gSAP-targeted therapy, comprising measuring gSAP expression of the gSAP according to claim 1, using antibodies to gSAP or quantitative PCR for gSAP expression, wherein elevated expression is seen in candidates for treatment with gSAP-targeted therapy.~~
- ~~19. A method of identifying a candidate for treatment with gSAP-targeted therapy, comprising identifying patients having mutations or genetic variations affecting gSAP or gSAP expression or gSAP activity of the gSAP according to claim 1, wherein patients having such mutations or haplotypes are candidates for treatment with gSAP-targeted therapy.~~

20. — The method of claim 19 wherein the variant is a haplotype selected from the following groups of SNPs:

- a) — rs6976567|rs1468682|rs1819814,
- b) — rs1468682|rs1819814|rs4729535,
- e) — rs1819814|rs4729535|rs4729540,
- d) — rs7781642|rs6955503|rs7776973

21. — The method of claim 19 wherein the variant is a variant of the sequence encoding the juxtamembrane region of APP-CTF.