

ORAL PRESENTATION

Open Access

BACE1, the Alzheimer's beta-secretase enzyme, in health and disease

Robert Vassar

From *Molecular Neurodegeneration: Basic biology and disease pathways*
Cannes, France. 10-12 September 2013

The beta-amyloid (A β) peptide is the major constituent of amyloid plaques in Alzheimer's disease (AD) brain and is likely to play a central role in the pathogenesis of this devastating neurodegenerative disorder. The beta-secretase, beta-site amyloid precursor protein cleaving enzyme 1 (BACE1; also called Asp2, memapsin 2), is the enzyme responsible for initiating the generation of A β . Thus, BACE1 is a prime drug target for the therapeutic inhibition of A β production for the treatment or prevention of AD. Since its discovery over 10 years ago, much has been learned about BACE1. This seminar will describe BACE1 properties, physiological functions, and dysregulation in AD. The therapeutic potential of BACE1 inhibitors for AD will also be considered. Particular focus will be placed upon our novel results demonstrating a role of BACE1 in the axon guidance of olfactory sensory neuron axons to specific odorant receptor glomeruli in the olfactory bulb and the therapeutic implications of these findings.

Published: 13 September 2013

doi:10.1186/1750-1326-8-S1-O7

Cite this article as: Vassar: BACE1, the Alzheimer's beta-secretase enzyme, in health and disease. *Molecular Neurodegeneration* 2013 8(Suppl 1):O7.

Submit your next manuscript to BioMed Central and take full advantage of:

- Convenient online submission
- Thorough peer review
- No space constraints or color figure charges
- Immediate publication on acceptance
- Inclusion in PubMed, CAS, Scopus and Google Scholar
- Research which is freely available for redistribution

Submit your manuscript at
www.biomedcentral.com/submit



Feinberg School of Medicine, Northwestern University, Chicago, USA



© 2013 Vassar; licensee BioMed Central Ltd. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/2.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.