



[Home](#) > [Research](#) > [Scientists](#) > Bart De Strooper Lab

## Bart De Strooper Lab

[Research focus](#) [Publications](#) [Job openings](#) [News](#)

### Research focus

We investigate the basic mechanisms causing Alzheimer's disease and Parkinson's disease arising from the genetic forms of these disorders.  
For Alzheimer's disease we focus on the secretases which are proteases that cleave the amyloid peptide from the amyloid precursor protein. The amyloid peptide is the main constituent of the plaques in the brain of patients with Alzheimer's disease. The secretases are not only important drug targets, but they are also involved in the regulation of important signaling processes most notoriously Notch signaling.

For Parkinson's disease we investigate the effect of mutations in the genes Pink1, Lrrk2 and Parkin on brain function.

We use in all our work transgenic approaches, primary cultures of neurons and biochemistry, sophisticated imaging and molecular biology to address our questions. We are also strongly committed to collaboration with industry to generate novel drugs for these devastating disorders.

[top](#)

### Publications

[Learning by Failing: Ideas and Concepts to Tackle gamma-Secretases in Alzheimer's Disease and Beyond](#)  
De Strooper B, Chavez Gutiérrez L  
Annual Review of Pharmacology and Toxicology, 55, 419-437, 2015

[Loss of GPR3 reduces the amyloid plaque burden and improves memory in Alzheimer's disease mouse models](#)

Huang Y Maruszewska A Horre K Vandeweyer E Wolfs L Snellinx A Saito T Radaelli E Cortthout N Colombelli J Lo A Van Aerscht L Callaerts-Vegh Z Tratzani D Bossers K Verhaegen J Rytten M Muncz S Dhooge R Swaab D Hardy J Saldo T De Strooper B Thathiah A  
Science Translational Medicine, 7, 309ra164, 2015  
\* These authors contributed equally

[PINK1 loss-of-function mutations affect mitochondrial complex I activity via NduFA10 ubiquitome uncoupling](#)

Morais Epifanio V Haddad D Craessaerts K De Beck P Swerts J Vilain S Aerts L Overberg L Grünewald A Seibler P Klein K Gevaert K Verstreken P De Strooper B  
SCIENCE, 344, 203-7, 2014

[Lessons from a failed gamma-Secretase Alzheimer trial](#)

De Strooper B  
CELL, 159, 721-6, 2014

[A Self-Organizing miR-132/Ctbp2 Circuit Regulates Bimodal Notch Signals and Glial Progenitor Fate Choice during Spinal Cord Maturation](#)  
Saha E, Lau Pou Cheung P, Sala Frigerio C, Coolen M, Bally-Cuif L, De Strooper B  
DEVELOPMENTAL CELL, 30, 423-36, 2014

[All publications of Bart De Strooper on Pubmed](#)

[top](#)

### Job openings

[Postdoc Position - Interneuron Connectivity and Vulnerability in Alzheimer's Disease](#)

[top](#)

### News

[Breakthrough research reveals a new target for Alzheimer's disease treatment](#)

14/10/2015 - A research team led by Amantha Thathiah (VIB/KU Leuven) has determined that a protein - known as GPR3 - might play an important role in alleviating the cognitive deficits and reducing the generation of amyloid plaques.

[Disruption of brain-blood barrier might influence progression of Alzheimer's](#)

29/09/2015 - The team of Roosmarijn Vandenbroucke in the Claude Libert Group (VIB/UGent) combined their knowledge and expertise related to inflammation with the expertise in Alzheimer's disease present in the Bart De Strooper Group (VIB/KU Leuven).

[Alzheimer's disease-related proteases, BACE1 and APTB-y-secretase, control axonal guidance by regulating growth cone dynamics](#)

14/09/2015 - BACE1 is the major drug target for Alzheimer's disease. Soraila Barão and Bart De Strooper (VIB/KU Leuven) now show that this protease is critically involved in axonal guidance processes in thalamic and hippocampal neurons.

[European scientists join forces for animal research](#)

26/11/2014 - Scientists across Europe are rising against the proposal of Stop Vivisection to phase out animal experimentation in Europe.

[Failed Alzheimer's test shows in which direction the research should continue](#)

06/11/2014 - Disappointing results in clinical Alzheimer's studies discourage scientists from continuing their research. Alzheimer's expert Bart De Strooper argues that these studies are not pointless, but merely indicate what the next steps should be.

[Zebrafish help to unravel Alzheimer's disease](#)

19/08/2014 - A new by VIB/KU Leuven scientists gives new knowledge about the regulation of stem cells in the nerve tissue of zebrafish embryos results in surprising insights into neurodegenerative disease processes in the human brain.

[Lack of energy at the basis of Parkinson's Disease - the molecular mechanism unraveled](#)

25/06/2014 - Vanessa Morais and Bart De Strooper (VIB/KU Leuven) demonstrated how a defect in the PINK1 gene causes Parkinson's disease.

[New discoveries place lack of energy at the basis of Parkinson's Disease](#)

20/03/2014 - Neuroscientists Vanessa Morais and Bart De Strooper from VIB and KU Leuven have demonstrated how a defect in the gene Pink1 results in Parkinson's disease.

[How competitive is VIB's neuroscience research](#)

15/06/2013 - How competitive is VIB neuroscience research?

[New insights contradict promising Alzheimer's research](#)

23/05/2013 - Technical comment of Bart De Strooper on the article about boxarotene as a potential Alzheimer's drug published in Science approximately a year ago.

[Prevention is better than cure. Also for Alzheimer's disease!](#)

01/02/2013 - On Monday 4 February, Dennis J. Selkoe and five other "brain teasers" will receive an honorary doctorate from the KU Leuven.

[LRRK2 control of synapse - a delicate balancing exercise](#)

14/12/2012 - Until now, it was not clearly understood how LRRK2 regulated synaptic function necessary in the treatment of Parkinson's. This situation has now been remedied by Samar Matta from the Bart De Strooper lab, in collaboration with the Patrik Verstreken lab.

[Leuven research opens new pathway for the treatment of Alzheimer's disease](#)

02/12/2012 - Scientists from VIB and KU Leuven have discovered a new target molecule for the development of a treatment against Alzheimer's disease.

[Too much protein HUWE1 causes intellectual disability](#)

31/08/2012 - 2 to 3 % of the children are born with an intellectual disability. VIB researchers at KU Leuven show that increased production of the HUWE1 protein is the cause in some patients.

[Double gold for VIB and K.U. Leuven - Bart De Strooper and Peter Carmeliet awarded ERC grants totaling 5 million euro](#)

18/11/2010 - VIB researchers Peter Carmeliet and Bart De Strooper have both been awarded Advanced Grants from the European Research Council. ERC Advanced Grants are the most prestigious European research grants, spanning a period of 5 years.

[VIB announces collaboration in the battle against neurodegenerative disorders](#)

11/10/2010 - VIB and Janssen R&D Neuroscience entered into an open-innovation collaboration to develop novel therapeutics for psychiatric and neurodegenerative disorders.

[Ruelens-Van Gorp Foundation and VIB-K.U. Leuven establish chair for research into the neurological disorder dystonia](#)

14/09/2010 - For the first time in Belgium, a private partner and an academic research institution have established a fund for research into a disease.

[Amount of gene surplus determines severity of mental retardation in males](#)



**Bart De Strooper**

Research area(s)

Neuroscience

Model organism(s)

Mouse

Zebrafish

Bio

MD, Univ. of Leuven, Leuven, Belgium, 1985

PhD, Univ. of Leuven, Leuven, Belgium, 1992

Postdoc, EMBL, Heidelberg, Germany 1994

VIB Group leader since 1999

EMBO Member

Scientific Director, Dept. of Molecular and Developmental Genetics since 2007

Contact info

VIB Center for the Biology of Disease

KU Leuven

O&N 4, 6e verd

Campus Gasthuisberg

Herestraat 49, bus 602

3000 LEUVEN

[Route description](#)

[bart.destrooper@cmv.vib-kuleuven.be](#)

Phone: +32 16 37 32 46

[Visit lab website of Bart De Strooper](#)

[Team members](#)

10/12/2009 - Researchers have discovered a new explanation for differences in the severity of mental illness in males. The more excess copies of a certain gene, the more serious the handicap.

**Progress toward an Alzheimer's drug that saves brain cells**

19/04/2009 - VIB scientists connected to the K.U. Leuven have identified a molecule that can form the basis for a new therapy for Alzheimer's disease. This is the first step toward a medicine that could actually stop the progress of Alzheimer's.

**New target for medicine to combat Alzheimer's - VIB scientists confirm protein's key role**

12/02/2009 - VIB scientists connected to the Center for Human Genetics (K.U. Leuven) have demonstrated that a particular protein is extremely well suited to be a target for a new medicine against Alzheimer's disease.

**Revealing the regulating mechanism behind signal transduction in the brain**

16/09/2008 - Revealing the regulating mechanism behind signal transduction in the brain

**Incorrectly cleaved protein leads to schizophrenia**

14/07/2008 - Incorrectly cleaved protein leads to schizophrenia

**Ground-breaking new insight into the development of Alzheimer's disease**

22/04/2008 - Ground-breaking new insight into the development of Alzheimer's disease

