

# Cognition Therapeutics Inc.

Discovering small molecule therapeutics for  
neurodegenerative diseases



## Discovering Drugs for Alzheimer's Disease

PghTech Women's Network  
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# Acknowledgements



## Cognition Therapeutics

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Jim Jordan          Phil Petraglia

## Innovation Works

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Frank Demmler      Larry Miller

# Overview

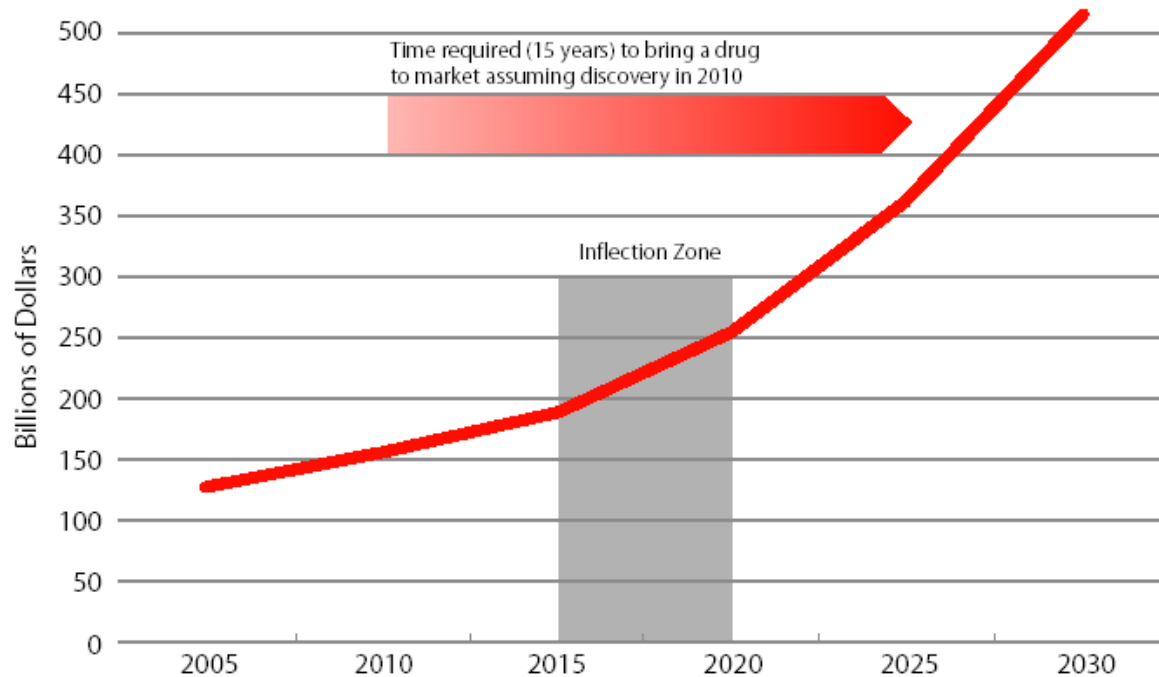


- Alzheimer's disease – an epidemic of suffering
- Background on Alzheimer's disease biology – what we know about the cause of the disease
- Discovering Drugs to prevent or reverse the fundamental cause of the disease

# The Cost of Alzheimer's



Projected Combined Medicare/Medicaid Costs of Alzheimer's



- 5M → 16M patients by 2050; 1 out of 8 baby boomers
- 5 approved drugs, all briefly improve symptoms
- NONE are disease-modifying

# The Cost of Alzheimer's



- Direct costs = \$54 billion annually
- Seventy percent of Alzheimer's patients live at home
- 10 million Americans provide 8.5 billion hours of unpaid care = \$94 billion
- The real cost:
  - Loss of loved ones
  - Loss of an entire generation of wisdom

# What you learned in the HBO program “The Alzheimer’s Project” about AD science

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- The importance of staying healthy, exercising, eating right, staying mentally active
- The earlier we can diagnose this disease, the better
- Old ways of thinking about AD have yielded to new ones



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The National Institute on Aging presents

**Inside the Brain:  
Unraveling the Mystery of Alzheimer's Disease**

A short film that can be accessed by clicking on  
<http://www.nia.nih.gov/Alzheimers/ADVideo/>

# What you didn't learn in the movies

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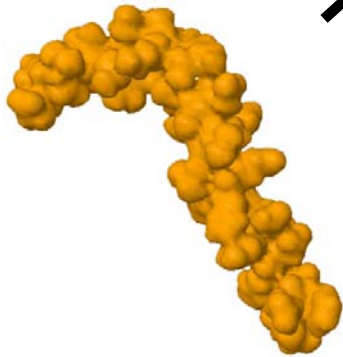
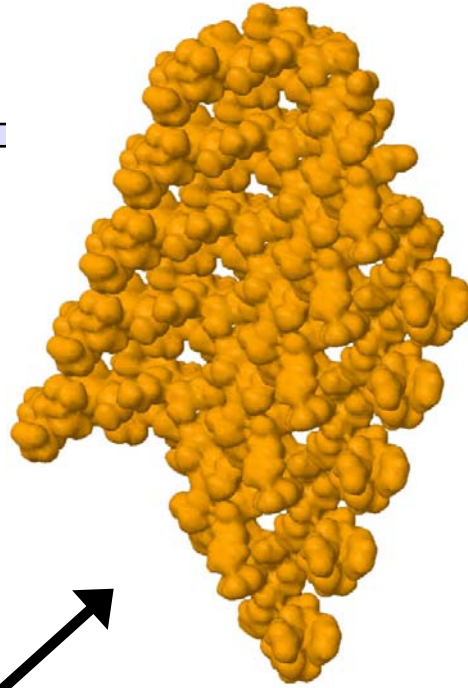


- Beta-amyloid appears to be the initiator of the Alzheimer's disease
  - Cause memory loss, the earliest symptom of the disease
  - cause the changes in tau protein
- A specific shape of beta-amyloid is to blame for the earliest changes in the brain

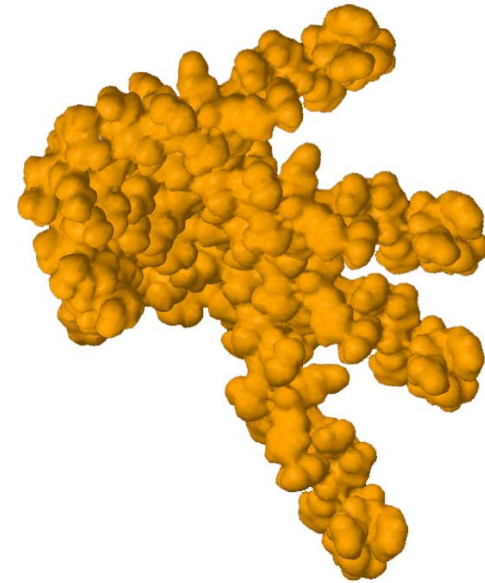
# The most toxic shape of beta-amyloid



Beta-amyloid fibril



Beta-amyloid monomer

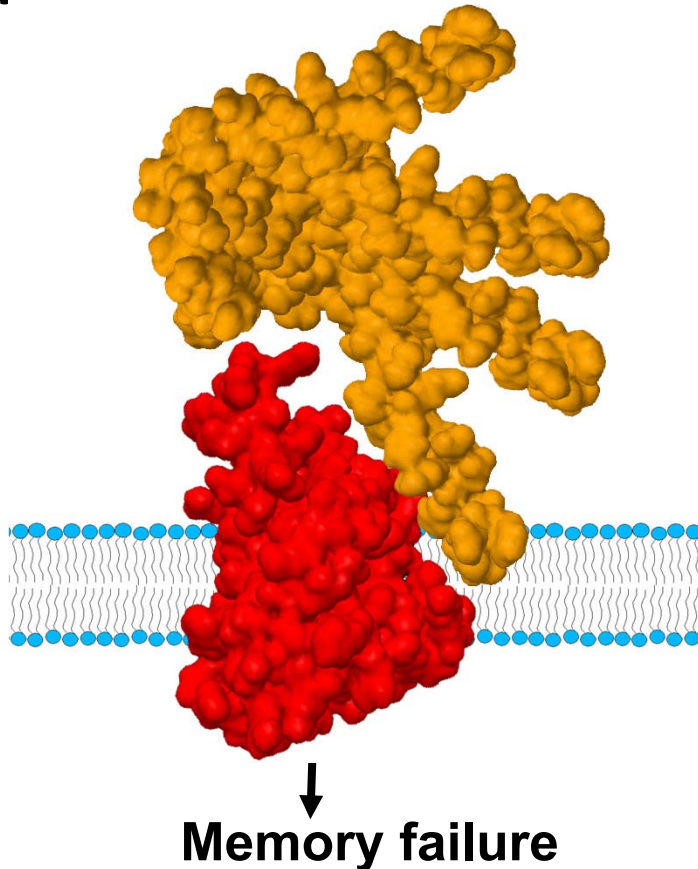


Beta-amyloid oligomer

# The most toxic shape of beta-amyloid



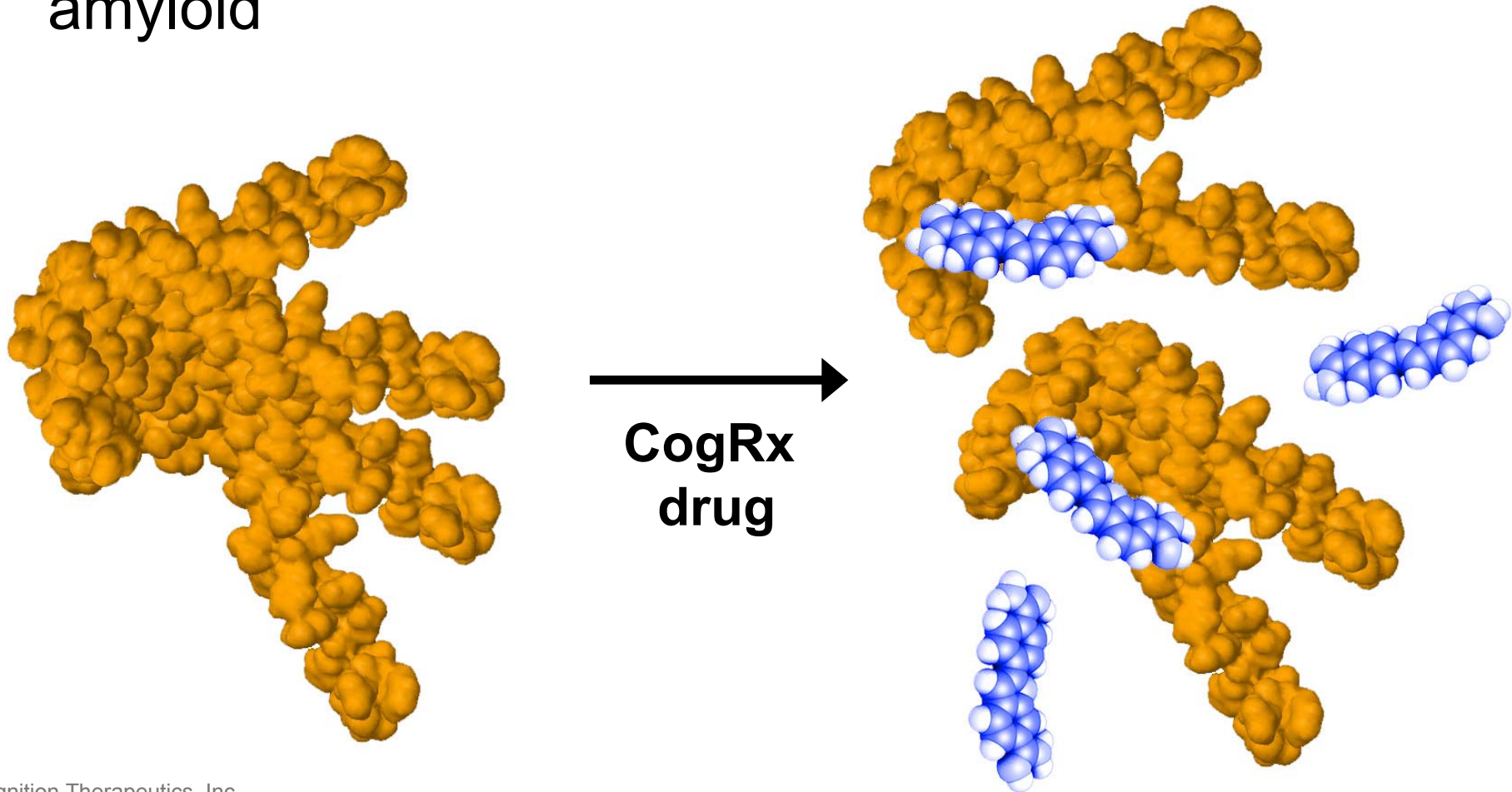
- Beta-amyloid oligomers bind to surface proteins at synapses and lead to memory failure



# Cognition's strategy for AD



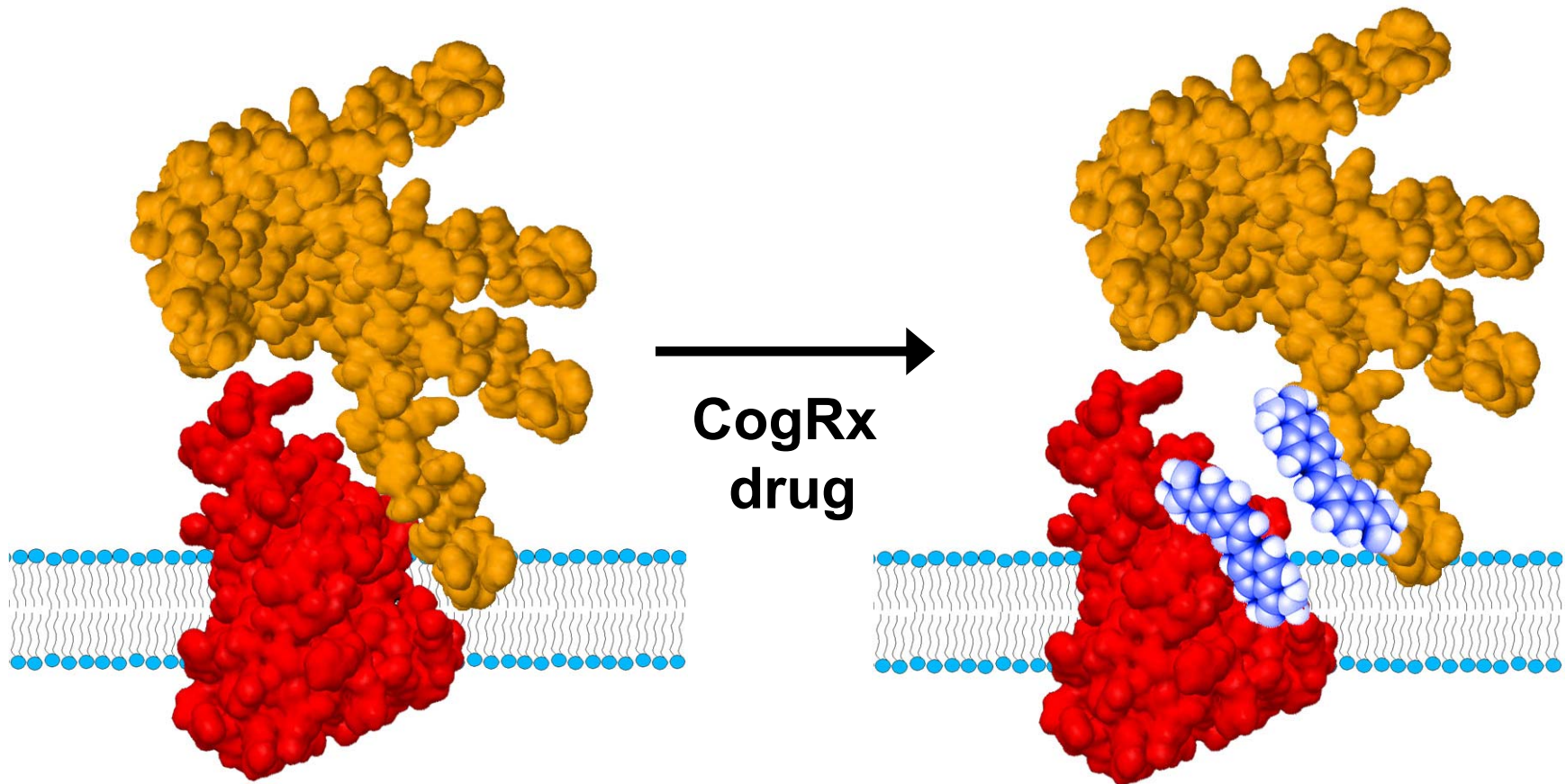
- Find a drug that can stop the toxic shape of beta-amyloid



# Cognition's strategy for AD



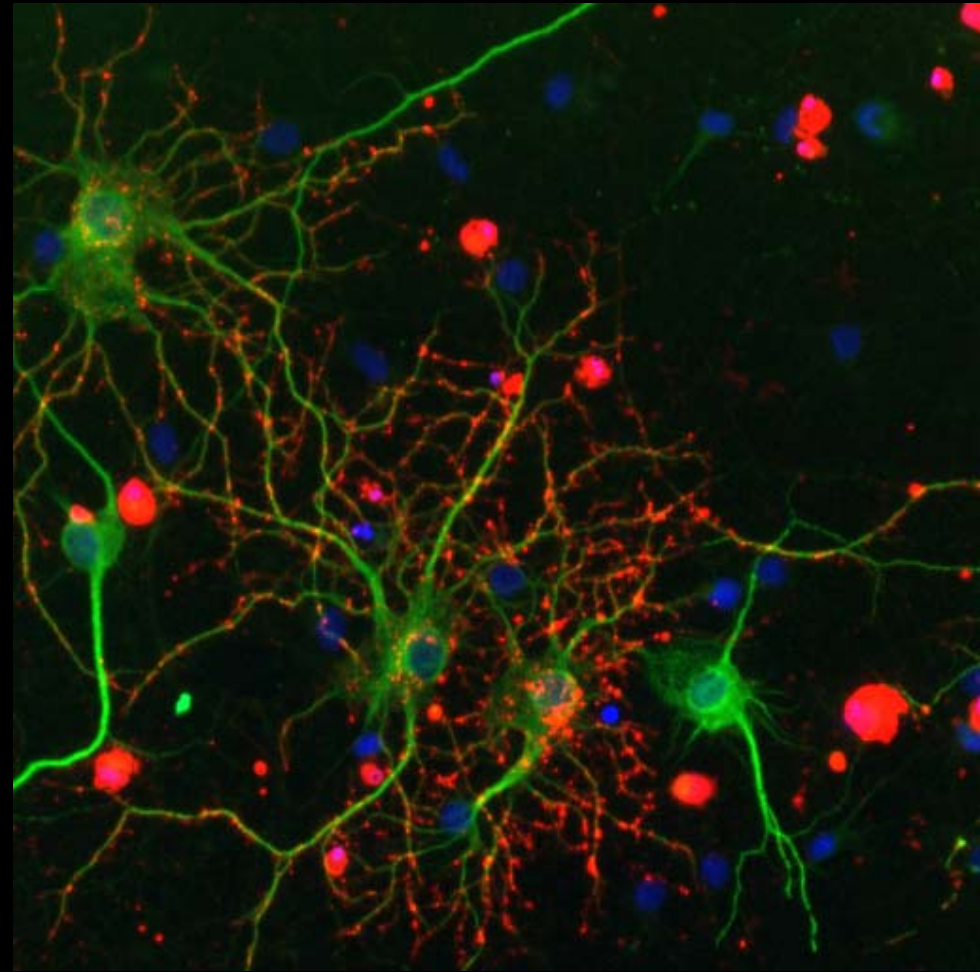
- Find a drug that can stop the toxic shape of beta-amyloid



# How Cognition finds drugs



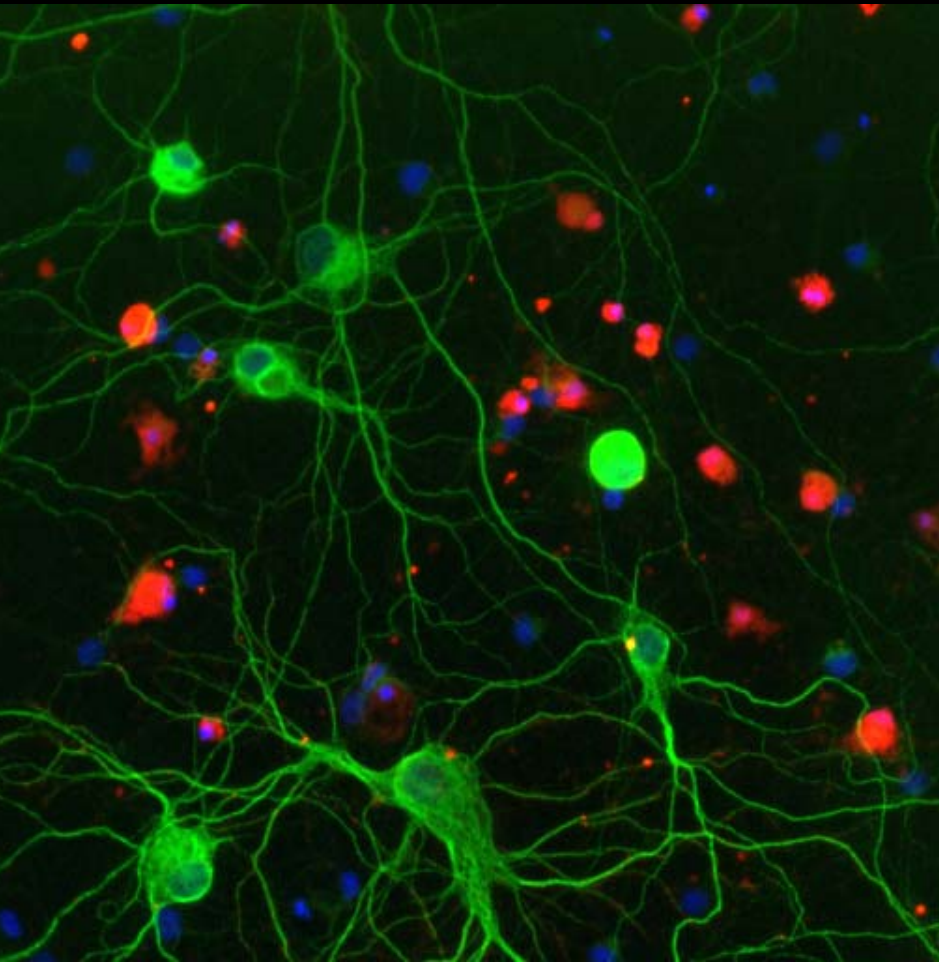
**Beta-amyloid oligomers bind to surface proteins on neurons**



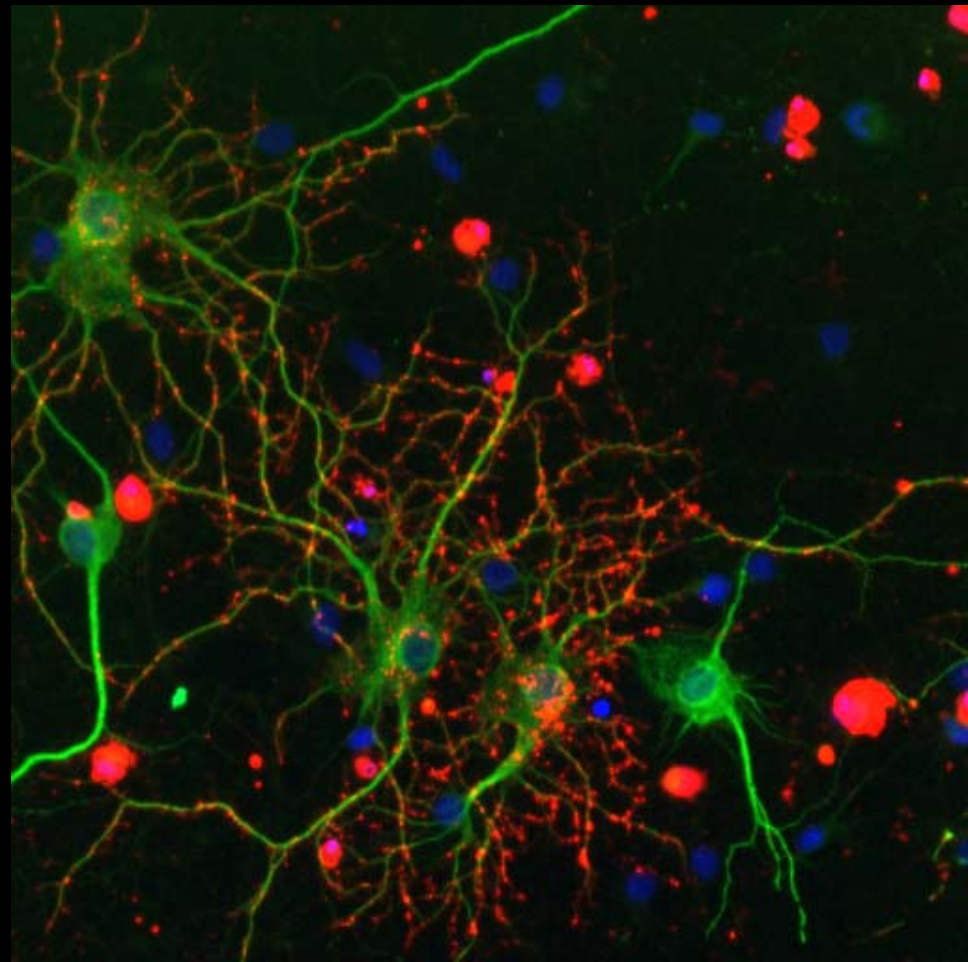
**Neurons**

**Beta-amyloid oligomers**

# Beta amyloid cannot bind in presence of drug



**Beta amyloid + Cognition drug**



**Beta-amyloid**



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Cognition Therapeutics Inc.  
[www.cogrx.com](http://www.cogrx.com)