

Target: ADDL Synuclein?	LTP or LTD ADDL reduce LTP Synuclein reduces LTP?	Disease relevance Mouse models	K-channels A-current	Proteins Genes	Gene expression patterns	
Dataset/ Source: SWAN		ModelDB	BrainPharm	GenSat	AllenBrain PubMed	Alzgene
Questions: What form of Abeta cause AD?	How does ADDL impair synaptic plasticity? What cell types are affected? Go to next slide	Does LTP occur in the right place? Right cell type? Channel → cell type	What is the mechanism? Go to slide 3	What genes and proteins are involved?	Which genes are expressed in the relevant part of the brain?	

2: driving question

How does ADDL impair synaptic plasticity? What cell types are affected? Brings to mechanism question				
Brain Pharm	AD→CA1			
NeuronDB	CA1→extracellular →Abeta CA1→has current→A-current A-current→has channel→K+			
Missing datasets	Currents that have K+ ions are conducting K+ channels? CA1→LTP			

3: mechanisms

K-channels → proteins K-channels → genes CA1 → LTP				
LTP → papers MeSH “LTP” and “K-channel” co-localization network				
PubMed : Kv4.2 pmid: 17122039 Paper → Gene Orthomap	AlzGene: Potassium channel gene → Hille → WashU → channel database			
Entrezgene → PubMed GeneRIF → PubMed	Jax → synaptic plasticity Jax → hippocampal biology			