

January 2021

***Disease-modifying
medicines for
neurodegenerative
disorders***



The “New” Cognition: CNS Disease Expertise with Compelling Neurodegenerative and Neuro-Ophthalmology Opportunities

The science of σ -2 biology led us to first pursue Alzheimer's disease and now dry AMD/GA - indications with significant unmet need and large market potential. Other indications to follow

Neurodegenerative Diseases

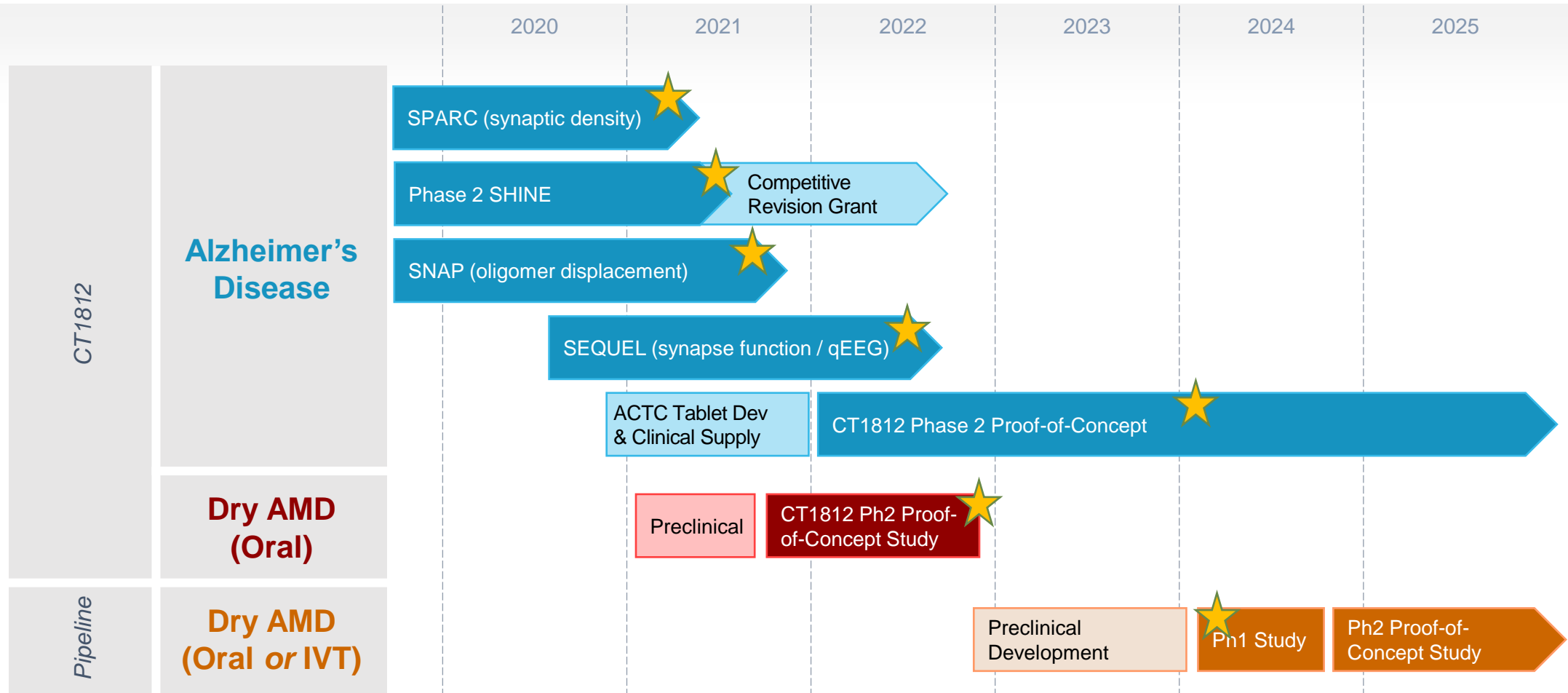
- Alzheimer's disease
- Parkinson's disease
- Multiple system atrophy
- Huntington's disease

Neuro-ophthalmic Diseases

- Dry age-related macular degeneration
- Geography atrophy

Pipeline:

Near-term Milestones



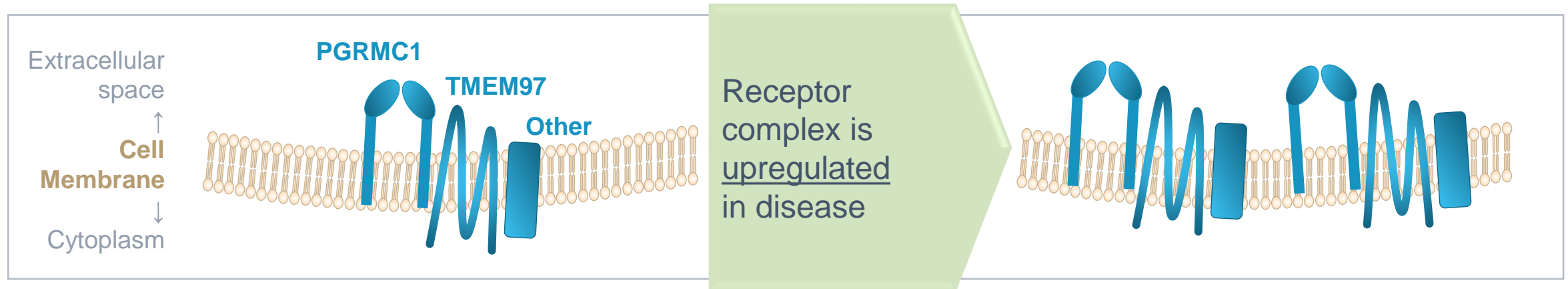
★ Stars indicate clinical milestones

σ -2 Receptor Complex: *Cellular Damage Response Regulator*

PGRMC1 is involved in vesicle trafficking, cell cycle regulation, autophagy

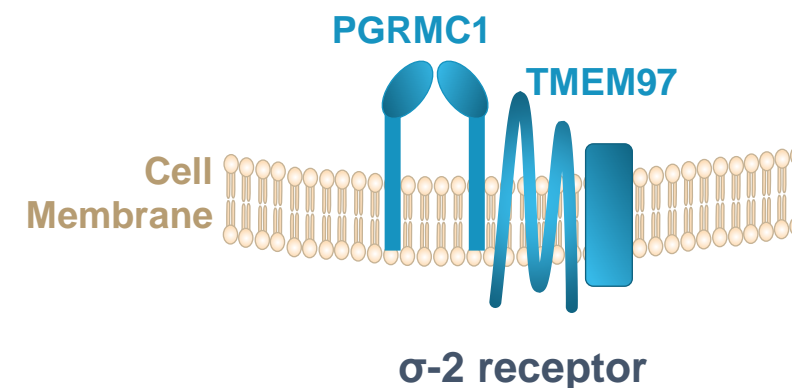
TMEM97 is involved in cholesterol transport

σ -2 receptor regulates cellular stress response



Cellular Damage Response Disrupted in Multiple Conditions

- PGRMC1 and TMEM97 (σ -2 proteins) regulate damage response processes:
 - Autophagy
 - Cholesterol synthesis
 - Lipid membrane-bound protein trafficking
- These pathways are impaired by the build-up of age-related stressors such as:
 - **A β oligomers** in Alzheimer's disease
 - **Protein aggregates, oxidative stress and inflammation** in dry AMD/GA
 - **α -synuclein oligomers** in Parkinson's disease, DLB and MSA
 - **Oxidative stress and inflammation** in ALS and other neurodegenerative diseases
- Cognition's candidates target PGRMC1 and TMEM97 proteins with aim to return pathways to normal function
- Expected to be synergistic with other therapies





Cognition Pipeline: *Preclinical & Clinical Data in Neurodegenerative Diseases*

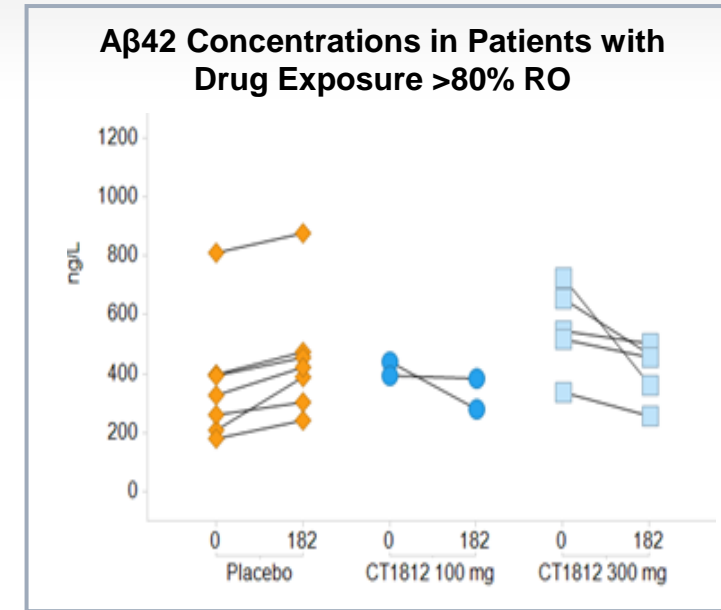
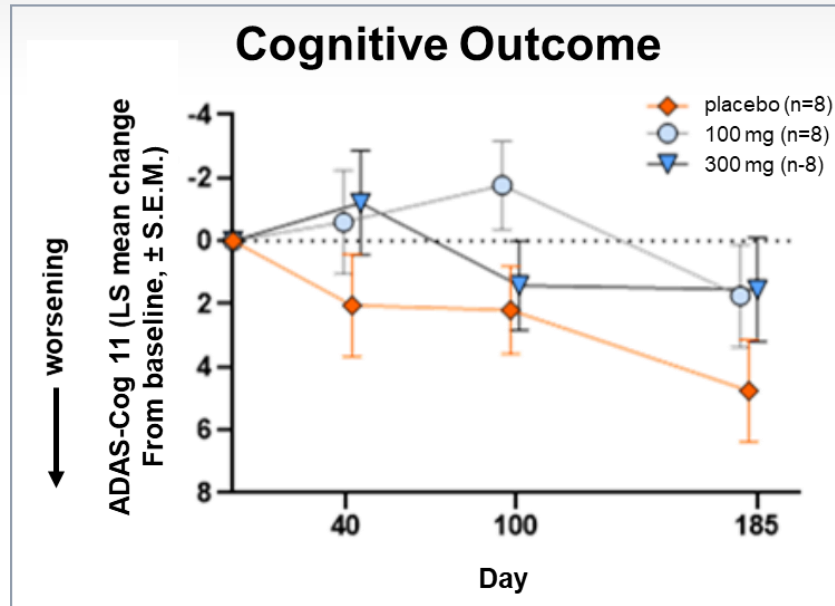


Alzheimer's Clinical Program

What We've Learned

Study	COG0101 SAD/MAD (n=74)	COG0102 (n = 19)	COG0103 DDI (n=15)	COG0104 SNAP (n=18)	COG0105 SPARC (n = 21)	COG0201 SHINE (n = 62)	COG0202 SEQUEL (n = 16)	COG0203 (n=540)
Indication	Healthy Volunteers	Mild-Moderate Alzheimer's	Healthy Volunteers	Mild-Moderate Alzheimer's	Mild-Moderate Alzheimer's	Mild-Moderate Alzheimer's	Mild-Moderate Alzheimer's	Early Alzheimer's
Phase	Phase 1	Phase 1b/2a	Phase 1	Phase 1	Phase 1	Phase 2	Phase 2	Phase 2
Objective	Safety & drug-food interaction	Safety & biomarker evidence of target engagement	Safety & drug-drug interaction	A β oligomers in CSF would be evidence of target engagement	Improvement in synapse numbers would be evidence of disease modification	Safety & biomarker evidence of disease modification	Changes in synapse function would be evidence of disease modification	Improvement in cognition
Status	Completed 2015	Completed 2018	Completed 2016	Ongoing	Ongoing	Cohort A Complete Cohort B Ongoing	Commencing enrollment in 2020	Funded / Enrollment Expected to commence in 2021
Results	Safe & well tolerated	Safe & well tolerated Evidence of target engagement	No clinically significant DDI	Topline YE2021	Topline 1H2021	SHINE A: trend for cognitive improvement SHINE B: 1H 2021	Topline ~2H 2022	~2026

Phase 2 SHINE Interim Analysis: Promising Evidence of CT1812 Impact on Cognitive and Biological Outcomes in First 24 pts



- Three-point difference (ADAS-COG) between treated and untreated patients at day 185
- Clinically meaningful magnitude of change
- Compares favorably with aducanumab results

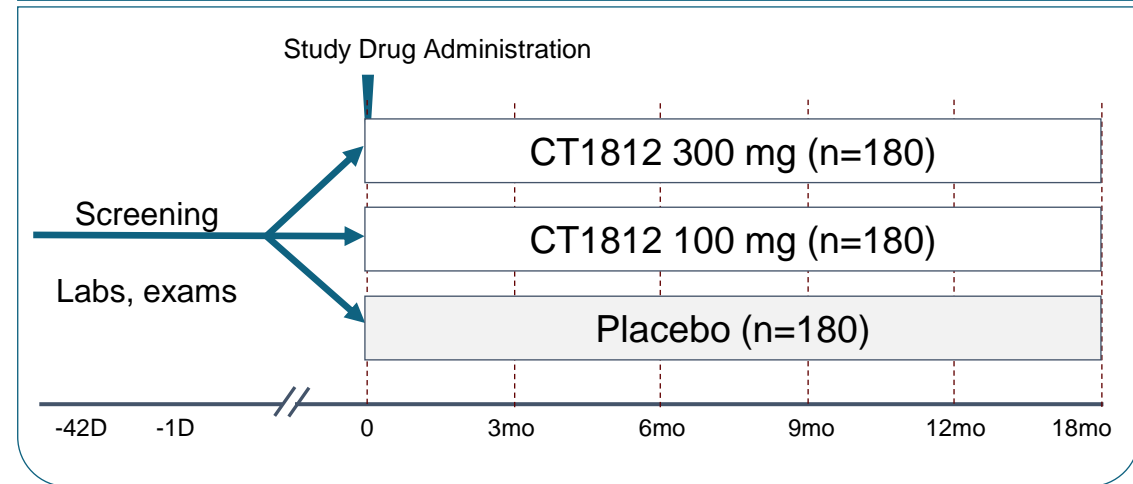
- Statistically significantly lower A β protein ($p=0.017$) in treated versus placebo patients
- Additional therapeutic impact on p-tau, synaptic and AD-related proteins

ACTC \$80M Grant Drives Program Through Phase 2

- COG0203: Phase 2 efficacy study, powered to show change in cognition: slowing or halting cognitive decline
- Enrollment: 540 individuals with early Alzheimer's disease
- Conducted in collaboration with premier NIA-funded Alzheimer's clinical trial organization
- 35 U.S. sites with potential for expansion and acceleration



Trial Schematic



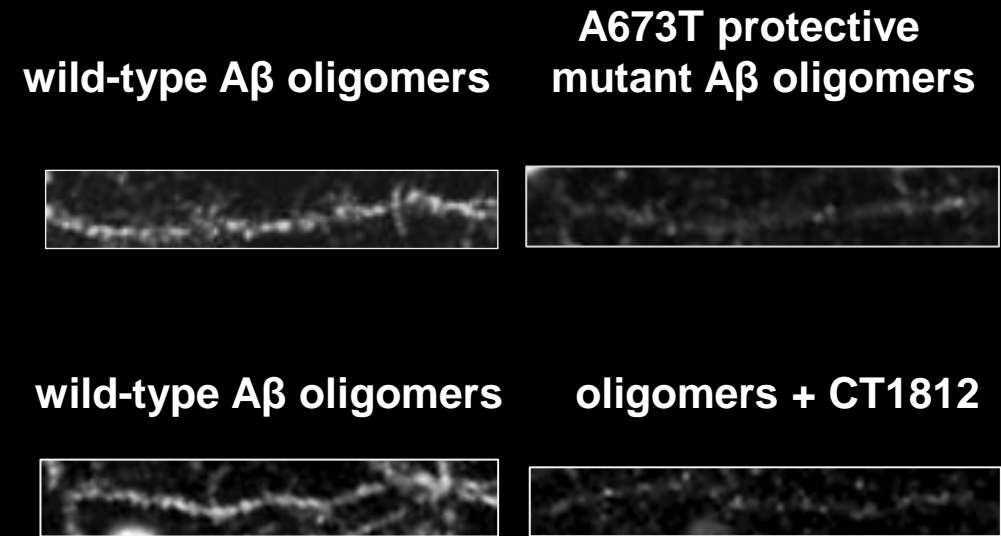
Cognition Study of A673T “Icelandic” Mutation Supports CT1812 MoA

- Carriers of the A673T “Icelandic” mutation of the A β protein are 4 times less likely to get Alzheimer’s disease than non-carriers
- Cognition study demonstrates that mutant A β oligomers bind with 4-fold lower affinity to brain cell synapses than normal protein
- CT1812 is the only drug that mimics the effects of this protective mutation

Alzheimer’s Protection Effect of A673T Mutation May Be Driven by Lower A β Oligomer Binding Affinity*

Colleen S. Limegrover, Harry LeVine III, Nicholas J. Izzo, Raymond Yurko, Kelsie Mozzoni, Courtney Rehak, Kelsey Sadlek, Hank Safferstein, Susan M. Catalano

Journal of Neurochemistry. doi: <https://doi:10.1111/jnc.15212>





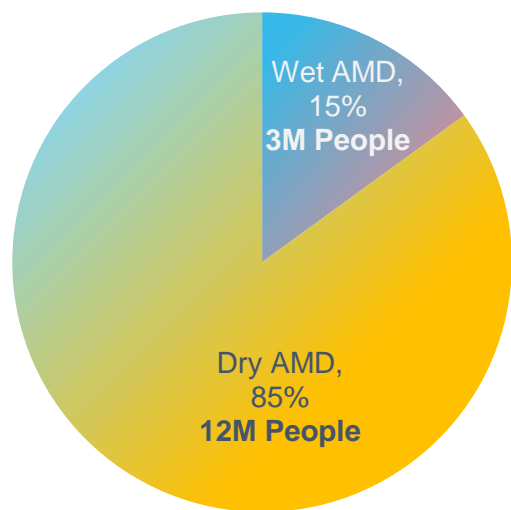
Cognition Pipeline: *Neuro-ophthalmic Diseases*



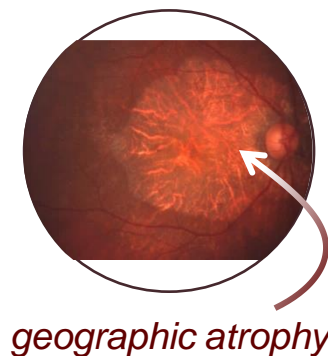
Dry AMD / Geographic Atrophy are Compelling Markets

*Leading Cause of Severe Vision Loss in People over 50 (AAO)**

15 million people in North America have AMD



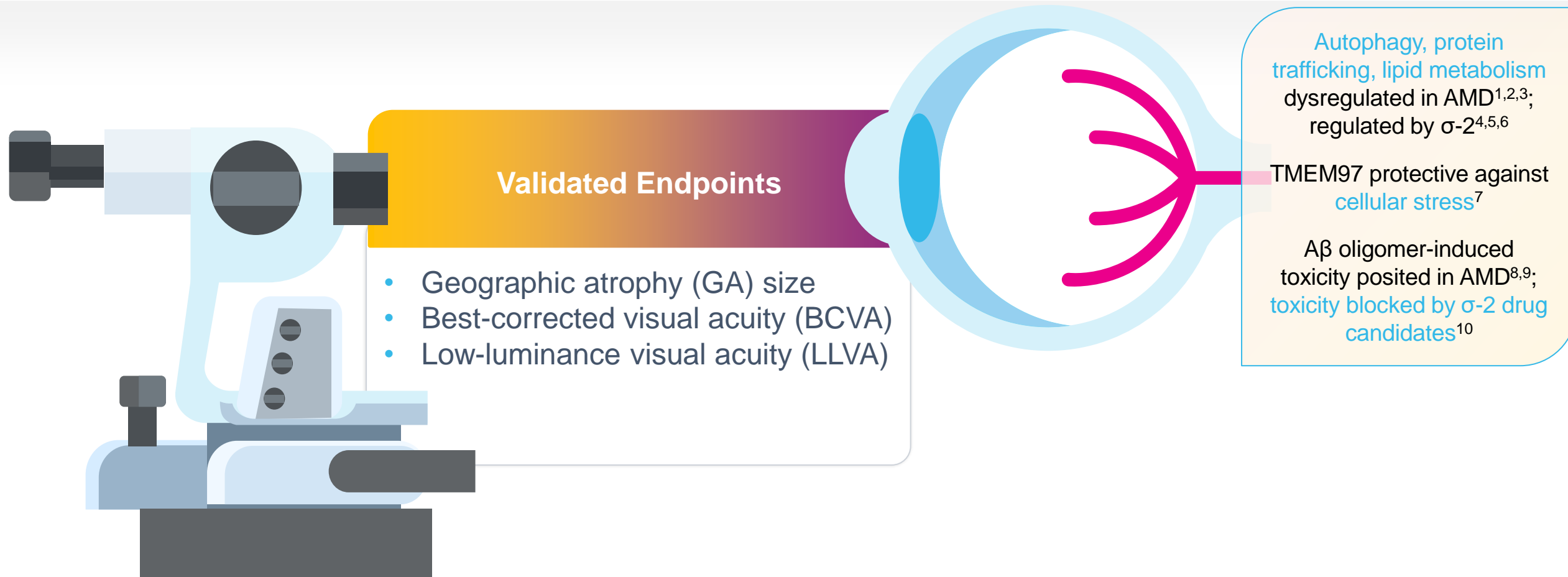
- Unlike wet AMD, there are no approved drugs
 - Dietary supplements are current standard of care
- Disease progression is measured in part by magnitude of geographic atrophy (GA)
 - GA is a progressive degeneration of the macula
 - Regions of atrophy result in a blind spot in the visual field



* American Academy of Ophthalmology

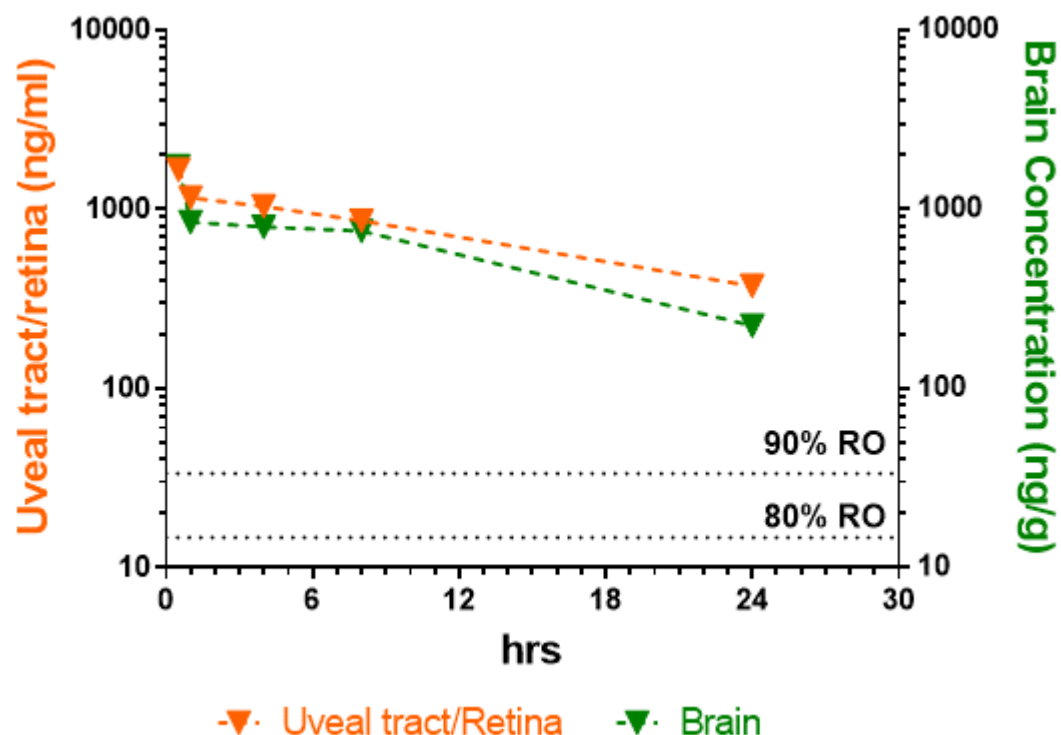
Dry AMD / Geographic Atrophy:

Goal: Treat Biological Defects that Lead to Retinal Cell Degeneration



In Vivo Pharmacokinetics Show Ample Distribution to Eye

Retinal and Brain Concentrations in Rats*
Following Oral CT1812 (40mg/kg)

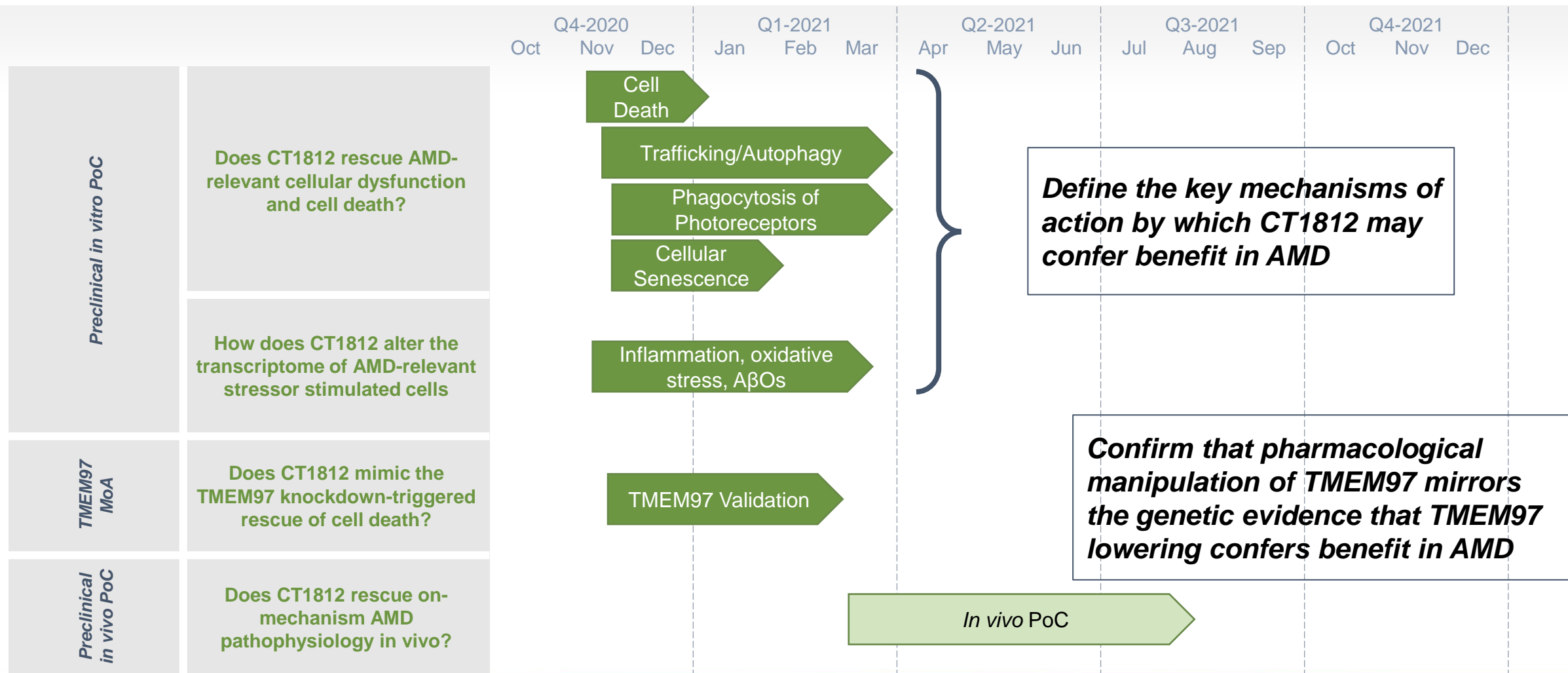


- *In vivo* study using ^{14}C -labeled CT1812 achieves levels[†] in the retina (orange) at least as great as those in the brain (green)

[†] >80% occupancy is target dose associated with positive effects in animal models of Alzheimer's disease

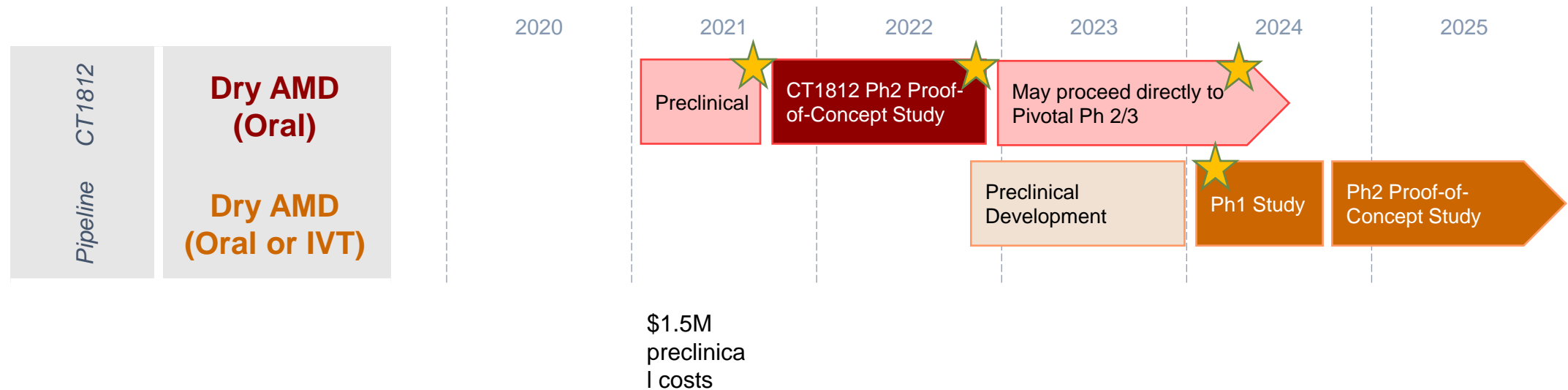
* Sprague Dawley rats

AMD – Evidence of Preclinical Proof of Concept of CT1812



CT1812 may Restore Downstream Processes

- CT1812 may remove toxic proteins from the sites where they damage retinal cells
- Objective is to restore downstream processes
- On track to complete proof-of-concept trial in 2022
- Pipeline molecules also being assessed as potential candidates for dry AMD

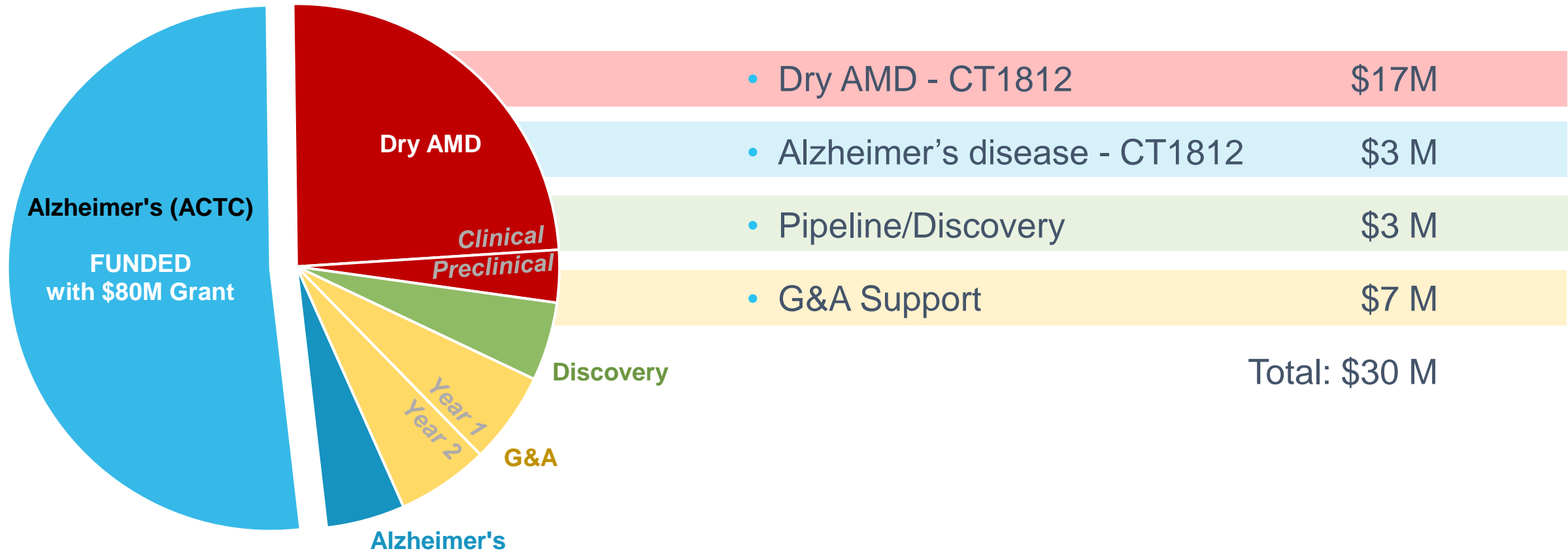


Financial Update

	Year ended December 31, 2019 (Audited)	Nine-month ended September 30, 2020 (Unaudited)
Cash	\$2,889,670	\$5,193,100
Convertible Notes Outstanding	\$7,626,055	\$13,000,000
Grant Revenue	\$13,164,335	\$10,958,200
Research & Development Expenses	\$14,379,145	\$13,434,700
Loss from Operations	\$4,666,425	\$6,562,600
Fully Diluted Shares Outstanding	56,171,147	58,270,700

Scored grant applications for DLB (\$30M) and SHINE B (\$13M) via NIA

Use of Proceeds 2021-2022



Thank You

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