Application number/Title: A PRECISION MEDICINE APPROACH FOR TREATMENT AND PREVENTION OF ALZHEIMER'S DISEASE USING STATINS

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Keywords provided by the Applicant PI to describe the research project:

Alzheimer's, Precision Medicine, Statins, APOE

Application Lay Summary:

1a: Alzheimer's disease (AD) has reached global epidemic proportions. Therapeutics to prevent, delay and treat AD are urgently needed.

Significant emerging evidence links cholesterol, Aβ and AD, and several studies have shown a reduced risk for AD and dementia in populations treated with statins. The ApoE4 allele of the apolipoprotein E gene, is associated with higher cholesterol levels and increased risk for AD. Preliminary results of our own meta-analysis of clinical trial data indicate that the use of statins may delay or slow down the progression of the disease and cognitive decline, to a greater extent in ApoE4 carriers.

1b: Despite substantial research and development investment in Alzheimer's disease, effective therapeutics remain elusive. Our precision medicine approach will generate scientific evidence needed to drive the development of therapies that treat the right person, with the right treatment at the right time.

1c: We propose the use of a precision medicine approach, which takes into account people's individual variations in genes, environment and lifestyle, for analysis of data from the UK BioBank, in order to further examine the effect that the use of statins may have on the onset and cognitive decline of Alzheimer's disease.

1d: Full cohort