

Colin L. Masters

**Executive Director, Mental Health Research Institute
Laureate Professor, The University of Melbourne**

Colin Masters' achievements have provided a path to the current development of therapeutic strategies for Alzheimer's and other neurodegenerative diseases, affecting the quality of life of millions of people worldwide. From the discoveries of the sequence of the A β amyloid protein in the brain plaques of Alzheimer's disease, which facilitated cloning the gene for the amyloid precursor protein and revealed the proteolytic and neuronal origin of the A β protein, he and his colleagues have gone on to elucidate the pathways leading to the toxicity and accumulation of A β in the aging human brain. These pathways have been of great importance in the development of a variety of drug targets, some directed at the secretases that facilitate the release of amyloid A β protein from nerve cells, and others directed at the toxicity and aggregation of the A β protein itself. Thus, from a state twenty years ago when virtually nothing was understood about the molecular basis of Alzheimer's disease, the studies of Masters with Konrad Beyreuther (University of Heidelberg) are widely acknowledged as having had a major influence on the direction of a now world-wide research effort. The next ten years are exceptionally promising with the real prospect of developing new drugs aimed at the A β amyloidogenic pathway and applying pre-clinical diagnosis using A β as the target. Masters' work has also opened up new insights into other major neurodegenerative diseases (such as Creutzfeldt-Jakob and Parkinson's diseases) in which aggregated proteins accumulate, work that has thus provided clues to therapeutic interventions for multiple disease states.