

Drug discovery tools to examine neuroinflammation signalling in human iPSC-derived microglia

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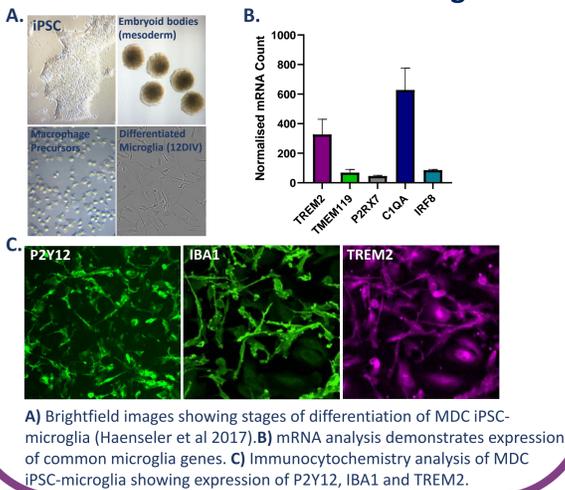
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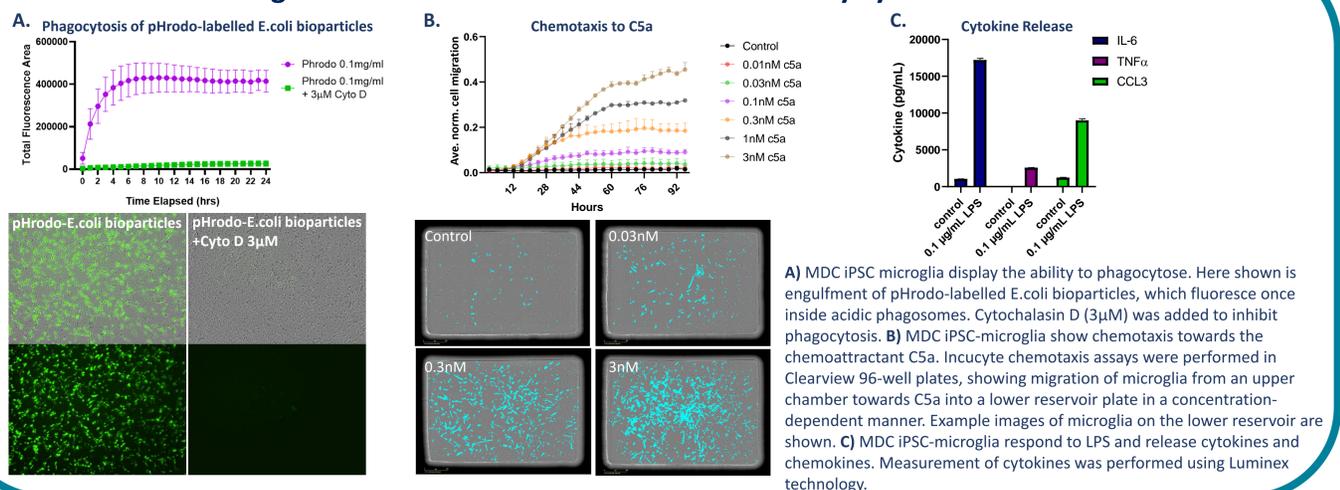
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- **Huge challenges exist in central nervous system (CNS) drug discovery:** There is significant unmet need across the spectrum of CNS disorders.
- There has been renewed interest in developing novel CNS therapeutics and innovation with advances in human iPSC cell models, biomarker research and understanding immune system contribution.
- Neuroinflammation is proposed to play a major role in across the spectrum of CNS disorders, including neurodegenerative diseases such as Alzheimer's and Parkinson's.
- Microglia, the resident immune cells of the CNS, are key mediators of neuroinflammation in the CNS. Recently, recently there has been a significant effort directed towards developing human *in vitro* iPSC-microglia cell models, with the aim to improve the understanding of disease mechanisms and to increase clinical translation.
- At MDC, we have generated functional iPSC-microglia that respond to inflammatory stimuli.
- We have established lentiviral based reporters to interrogate inflammation signalling and inflammasome activation for drug discovery projects.
- Together these represent **invaluable drug discovery tools for investigating CNS and inflammatory diseases.**

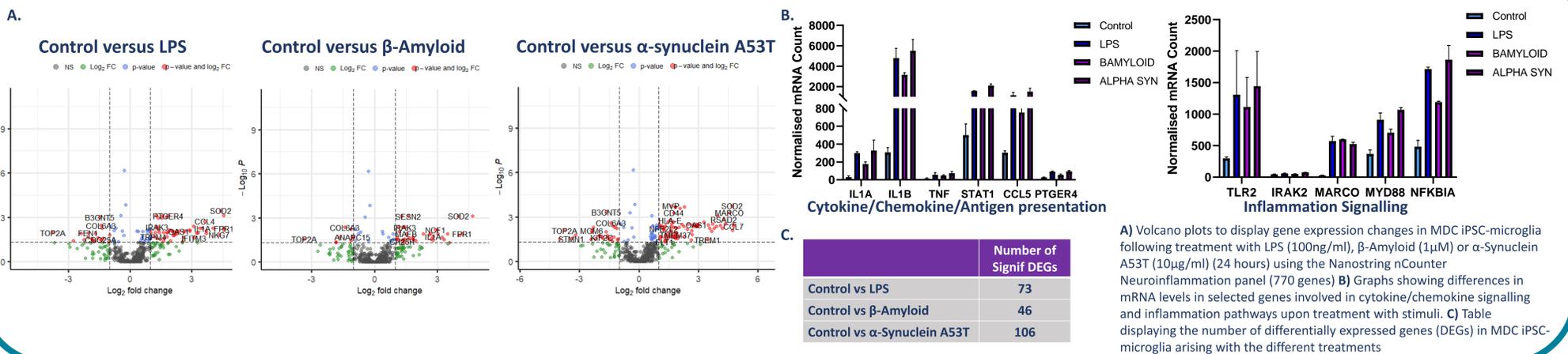
1. Production of MDC iPSC-microglia



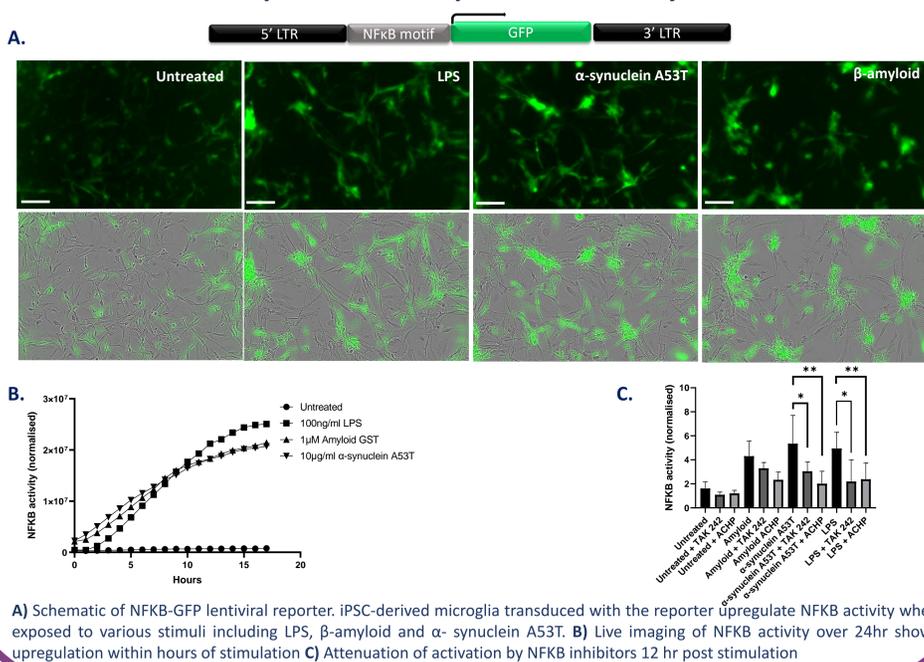
2. MDC iPSC-microglia are functional and release inflammatory cytokines



3. Molecular profiling of MDC iPSC-Microglia demonstrates they are responsive to inflammatory and disease-causing stimuli



4. Use of a NFκB-GFP lentiviral reporter in MDC iPSC microglia demonstrates response to multiple inflammatory stimuli



5. Tools to examine inflammasome activation

