ADVANCING PARKINSON'S DISEASE DETECTION WITH FLISA: A NOVEL APPROACH TARGETING MISFOLDED ALPHA-SYNUCLEIN

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ABSTRACT

A Fluorescence-Linked Immunosorbent Assay (FLISA) targeting β-cross-sheet α-synuclein protein, a crucial marker in Parkinson's Disease (PD), was assessed using *in vitro* assay with a rotenone-induced PD cellular model. The study aimed to evaluate FLISA's applicability with the inhouse developed labelled polyclonal antibody (pAb). Results are promising the competitive assay successfully distinguished misfolded α-synuclein in SH-SY5Y cells. Quantitative analysis revealed a direct correlation between competitive antigen concentration and decreased fluorescence, showcasing FLISA's sensitivity. Controls exhibited maximal fluorescence, confirming the absence of misfolded proteins, while rotenone-exposed cells displayed reduced fluorescence, suggesting their presence. This approach enhances PD understanding and supports potential interventions.