The BRITISH UNIVERSITY IN EGYPT

## Project Summary

Project titled **"Molecular Study on Investigating New Strategy for Prevention/Treatment of Alzheimer Disease in vivo: Role of Autophagy and Ferroptosis Modulators and Noncoding genes"**

**Objectives:**

Alzheimer's disease (AD) is characterized by the accumulation of toxic protein aggregates (amyloid plaques and tau tangles) within brain cells, which progressively disrupt neuronal function. This in vivo study tries to explore the possible neuroprotective effect of some amino acids and natural compounds (e.g. L-tyrosine, citicoline, and fisetin) in mitigating development and progression of AD. Whether these interventions could interfere with two key cellular processes, autophagy and ferroptosis, and their interplay with microRNAs (miRNAs) will be investigated.

**Partners:** The Research Team consists of three staff members at Faculty of Pharmacy, the British University in Egypt and two staff members at Faculty of Pharmacy, Tanta University.

**Funding Agency:** Science, Technology, and Innovation Funding Authority (STDF).

**Expected Results:** Understanding how the tested compounds could interfere with autophagy, miRNAs, and ferroptosis paves the way for the development of novel therapeutic strategies to combat Alzheimer's disease. The development of effective AD treatments could lead to significant economic benefits by reducing healthcare costs, increasing workforce productivity, and improving quality of life for patients and their families. This research directly aligns with UN's Sustainable Development Goal 3 (SDG3): Ensuring healthy lives and promoting well-being for all ages.

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