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Biomarkers in diabetes and neurodegenerative diseases determine mitophagy and accelerated aging

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Major interests in mitochondrial apoptosis and neurodegenerative diseases have accelerated with relevance to impaired mitochondrial function as a causative factor in various neurodegenerative diseases. Evidence from various research groups have reported impaired mitochondrial dynamics (shape, size, fission-fusion, distribution, movement) in various neurodegenerative diseases. Clinical proteomics allows the detection of various proteins in fluids such as the urine, plasma and cerebrospinal fluid for the diagnosis of neurodegenerative diseases. The combination of genomic and proteomics now identify the biomarker Sirtuin 1 (Sirt 1) to be important in mitochondrial biogenesis in peripheral organ disease and neurodegeneration. Genomic and plasma Sirt 1 analysis are required to avoid inadvertent errors with relevance to new disease biomarkers in body fluids, cells and tissues. Management of chronic diseases such as diabetes and neurodegenerative diseases require the consumption of specific nutrients to maintain Sirt 1 levels and mitochondrial function essential for metabolism of proteins, glucose and fatty acids in the cells and tissues in diabetes and neurodegenerative diseases.

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