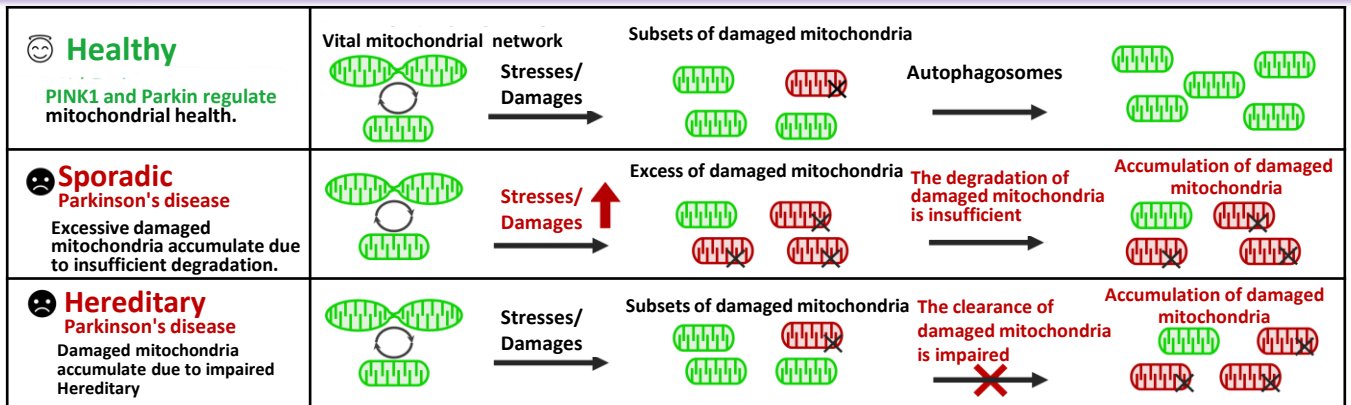


A Biomarker for Parkinson's Disease

~Phosphorylated Ubiquitin and It's Antibody Related to PINK1 and Parkin~

【 Background 】

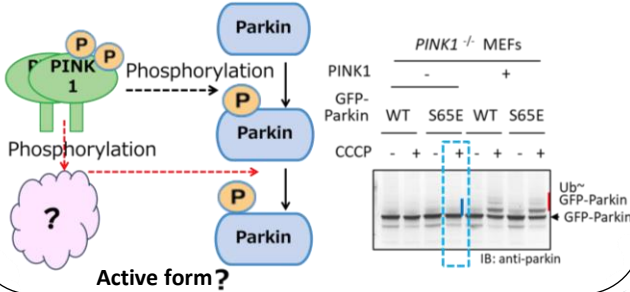
Accumulation of Damaged Mitochondria causes **Parkinson's disease**



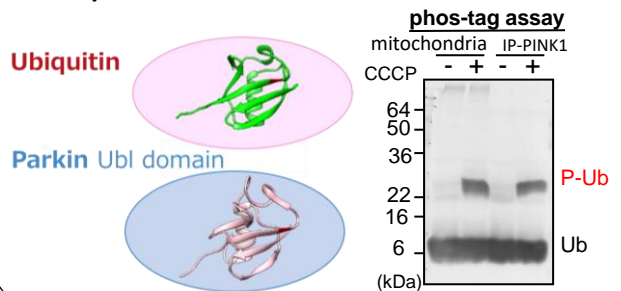
【 Summary 】

Phosphorylated Ubiquitin and It's Antibody Related to PINK1 and Parkin

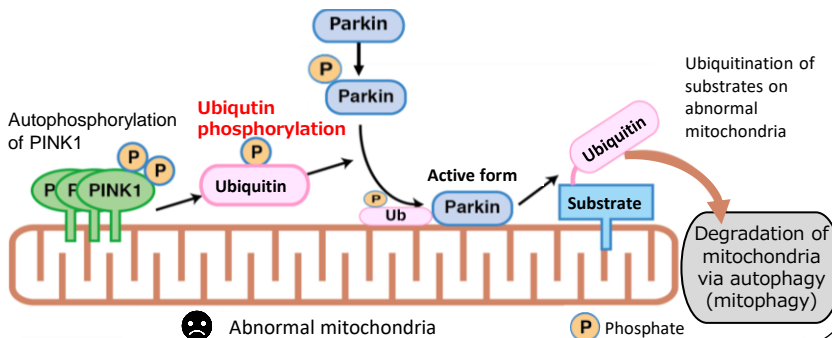
Parkin activation requires more than just PINK1-mediated phosphorylation.



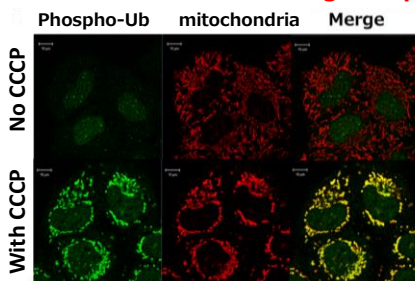
Ubiquitin is a focus as a substrate for PINK1



Without phosphorylation of ubiquitin, abnormal mitochondria accumulate in the brain and cause Parkinson's disease



Generation of antibodies against phospho-ubiquitin (S65)



This antibody detected CCCP-induced enhancement of cellular ubiquitin P-Ser65 on depolarized mitochondria.

Proposals

- **An early-onset biomarker**
Therapeutic drug screening such as ELISA, RIA, mass-spectrometry
- **Therapeutic drugs**
Phosphorylated Ubiquitin with PINK1 (kinase), Phosphomimetic Ubiquitin (S65D, S65E)
- **Development of monoclonal antibodies**
Enable to measure the phosphorylated ubiquitin with higher sensitivity

【 Patent 】

Biomarker for Parkinson's Disease and Use Therefore; JP 5997394, EP (GB/FR/DE) 3109636, US 9804174



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