

お茶の水女子大学生命情報学教育研究センター
第24回「バイオインフォマティクスへの招待」セミナーのご案内

日時:

平成22年6月3日(木)16時45分～

場所:

お茶の水女子大学理学部2号館4階405号室

講演者:

Prof. Sun-Shin Cha (Marine Biotechnology Research Center, Korea Ocean Research & Development Institute, South Korea)

演題:

Structural and biochemical investigation of human DJ-1, a protein associated with the pathogenesis of Parkinson's disease

要旨:

Human DJ-1 is a representative member of the DJ-1 superfamily whose members are evolutionarily distributed from Archaea to Eukarya. Mutations in the *DJ-1* gene have been implicated in the autosomal recessive early-onset parkinsonism. DJ-1 is a soluble dimeric protein playing critical roles in response to oxidative stresses and neuronal maintenance. However, several lines of evidence point to the existence of nonfunctional aggregated form of DJ-1 in the brain of patients with some neurodegenerative diseases. Here, we show that inorganic phosphate (P_i), an important anion whose level was reported to be elevated in patients with Parkinson's disease (PD) transforms DJ-1 into filamentous aggregates. According to the 2.4 Å crystal structure, DJ-1 dimers are linearly stacked through P_i -mediated interactions to form protofilaments, which are then bundled into a filamentous assembly. The P_i -induced aggregation of DJ-1 sensitizes cells to oxidative stress known to contribute to neuronal degeneration, suggesting the implication of DJ-1 aggregation in disease pathogenesis. Our study presented here opens new avenue to the elucidation of the implication of DJ-1 in the pathogenesis of neurodegenerative diseases including PD and to the development of inhibitors preventing DJ-1 aggregation.

参加費:無料(申し込み不要)

アクセス:丸ノ内線茗荷谷駅または有楽町線護国寺駅下車徒歩8分

主催:お茶の水女子大学生命情報学教育研究センター
文部科学省ターゲットタンパク研究プログラム

問い合わせ先:

お茶の水女子大学生命情報学教育研究センター、E-mail: yura.kei@ocha.ac.jp