

Crystal Structure of Ubiquitin-like Domain of Murine Parkin

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Parkin, which has been identified ubiquitin ligase, is the gene product of autosomal recessive juvenile parkinsonism (AR-JP). Parkin which consists of 464 amino acid residues has three domains; an N-terminal ubiquitin-like domain(ULD) and two RING finger-like domains. Parkin has important role in recognition of the target proteins and addition of the ubiquitin in proteasome system. In order to elucidate the fully function of Parkin, we have started the structure analysis of Uld of murine Parkin.

The recombinant murine Uld was expressed as inclusion body from *E.coli*. system. After refolding and purification, we crystallized Uld by hanging-drop vapor diffusion method. Under the condition of 0.1M acetate buffer(pH4.5) and 3M NaCl as a precipitant. The crystal belong to the hexagonal system, with unit cell dimensions of $a=b=45.57 \text{ \AA}$, $c=64.75 \text{ \AA}$, $\alpha = 120^\circ$. Diffraction data were collected up to 1.8 \AA resolution at beam line BL24XU of SPring-8. The initial structure was determined by molecular replacement by using the solution structure of Uld as start model. Refinement of structure is currently in progress.

Keywords: ubiquitin system, crystallization, structure analysis