

X-ray crystallographic studies of flagellar HAP2 and F41 fragment of flagellin.

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In this beam time, we were going to take a whole data set of a lead derivative of the F41 fragment of flagellin and check some new crystals of flagellar HAP2 protein, but could not carry out the work because of many unfortunate troubles, such as an injection trouble, a hatch trouble and a phi axis backlash problem. We were at least able to check the quality of a few new crystal forms of HAP2 and a lead derivative of the F41 fragment in this period. These crystals were too small or too thin to record diffraction data with a conventional X-ray source. The experiment was performed under cryogenic temperature at BL41XU. The new crystals of HAP2 diffracted up to 4\AA , worse than the crystals that have previously been obtained and diffracted up to 3\AA resolution. The lead derivative of the F41 fragment showed reflections beyond 3\AA resolution. The diffraction spots were fairly elongated, but when the very edge of the crystal was irradiated, nice diffraction spots were obtained, implying freezing stress caused distortion of

the thin crystal. In fact, after the beam time, we found that 'annealing' (repeated thawing and freezing of the crystal) of the frozen crystal improved the spot shape in our laboratory. We look forward to further data collection at Spring-8 for the derivative of the F41 fragment and HAP2 crystals.