

BL26B1

RIKEN Structural Genomics I

1. Introduction

BL26B1 is the RIKEN Structural Genomics Beamline I. It consists of SPring-8 standard bending-magnet beamline components and an end-station dedicated to high-throughput protein crystallography^[1]. Users can collect diffraction data from a vast amount of cryo-cooled protein crystals in an automated manner with the auto-sample exchanger SPACE and user interface BSS^[2, 3]. Asymmetrically cut crystals (asymmetric angle of 4.4°) for the double-crystal monochromator are adopted, and the capillary focusing lens (Hamamatsu J12432) at the upstream of the sample is an option^[4]. In the end-station, optional devices for room-temperature crystallography, such as the HAG (Humid Air and Glue-coating mounting method) system^[5], a crystallization plate scanner, and a plate stocker and exchanger, are implemented. Of the total beamtime, 80% is assigned to public users and 10% is allocated to BINDS (Basis for Supporting Innovative Drug Discovery and Life Science Research by AMED) project users.

2. Recent activities

In FY2019, new devices were implemented and upgraded. For higher-resolution data collection, a diffractometer stage for an area detector (EIGER X 4M, DECTRIS) at the end-station (Fig. 1) was upgraded. The shortest camera distance of 47 mm can collect diffraction data up to 0.76 Å at the detector edge at a wavelength of 0.75 Å. The plate exchanger and stocker system were equipped with the linear stage on the floor, which can be evacuated from the operation position. As a result, the

temperature controllable HAG system^[6] is available with the equipment facing the sample goniometer.

Currently, instrumentations and applications, such as an online temperature control system for crystallization plate, further automation of the data collection system with the plate scanner, a new online micro-spectrometer, are under development.

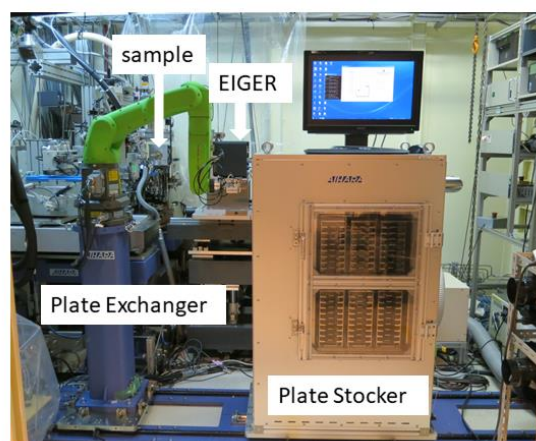


Fig. 1. End-station of BL26B1

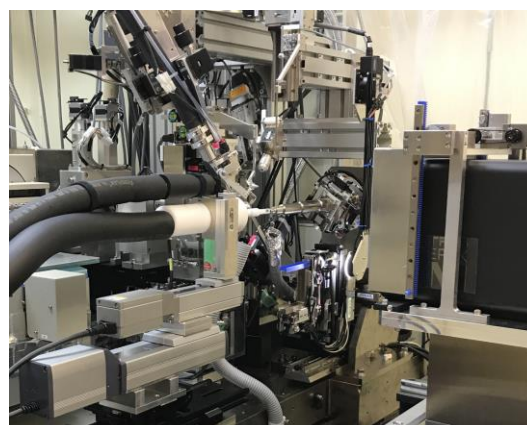


Fig. 2. Temperature controllable HAG system at the BL26B1 diffractometer.

Go Ueno^{*1} and Hideo Okumura^{*1,*2}

^{*1} SR Life Science Instrumentation Team, Life
Science Research Infrastructure Group,
Advanced Photon Technology Division, RIKEN
SPring-8 Center

^{*2} Structure Analysis Promotion Group, JASRI

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