BL32B2 Pharmaceutical Industry

The Pharmaceutical Industry Beamline was constructed by the Pharmaceutical Consortium for Protein Structure Analysis (PCProt) which is composed of 22 pharmaceutical companies affiliating with the Japan Pharmaceutical Manufacturers Association (JPMA).
The specification and equipments of this beamline is almost same as that of RIKEN Structural Genomics Beamline I & II.

Area of research

Protein structure analysis for structure-based drug design
It means design and optimization of new leading compounds based on pharmacodynamic action mechanism elucidated at the molecular level which obtained from a detailed interaction analysis of receptor-drug complexes, etc.

Keywords

Scientific field

Protein crystallography, Structure-based drug design, Drug discovery

Equipment

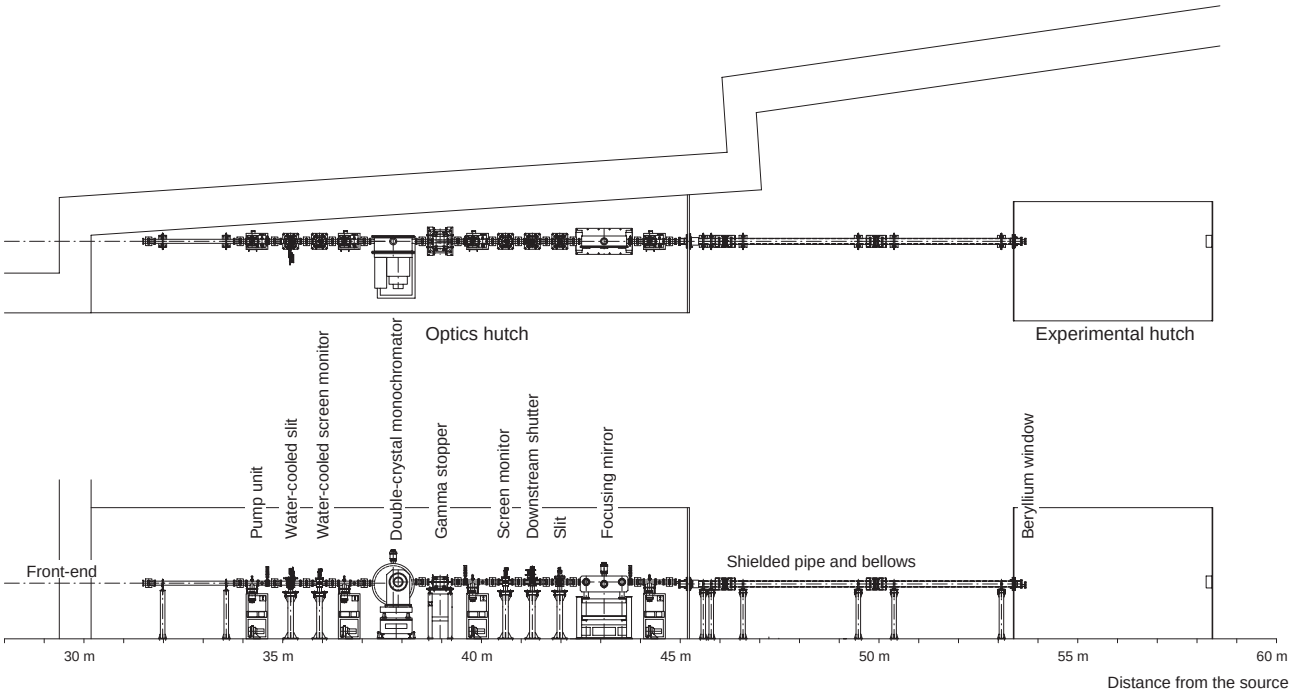
Diffractometer, Imaging plate detector, CCD detector

Source and optics

This Beamline has the SPring-8 standard transport channel and optics for bending magnet. Monochromatic X-rays from 7 to 17 keV can be obtained using standard double crystal monochromator and Rh-coated downward-deflection mirror with a typical glancing angle of 3.7 mrad. The X-ray Beam is focused on an sample using the bent cylindrical mirror.

X-rays at sample

Tunable energy range	7 ~ 17 keV
Energy resolution	$\Delta E/E \sim 10^{-4}$
Photon flux	$\sim 10^{10}$ photons/sec
Beam size	0.2 mm (V) × 0.2 mm (H)



Schematic view of beamline

Experimental stations

The total system of monochromatic data collection for routine protein crystallography and MAD (Multi-wavelength Anomalous Diffraction) experiments has been installed.

Measurement

• 2 quadrant slits
• Gas-flow type ionization chamber
• Imaging Plate detector for structural biology (Rigaku R-AXIS V) :
  Total active area of 400 mm × 400 mm and 100 μm pixels.
• CCD detector for protein crystallography (Rigaku/MSC Jupiter210) :
  2 × 2 array of detector modules, a total active area of 210 mm × 210 mm and 51 μm pixels.
• Si PIN photodiode detector and multi-channel analyzer for fluorescence measurement

Sample

• Sample stage
• Horizontal kappa-type goniometer
• Cryostream cooler (Nitrogen type) : temperature control range 80 ~ 350 K
• Coaxial microscope

Others

• Stereo microscope
• Cryogenic tank

Contact information

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