

XtalTool

The ALL-in-ONE Sample Holder

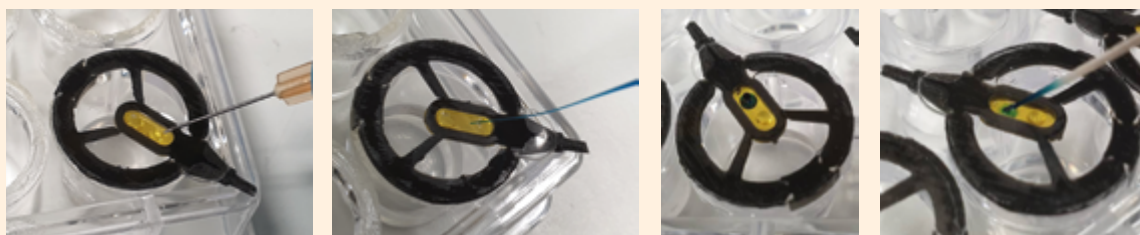


Crystal handling is a major bottleneck in protein crystallography. Macromolecular crystals are often fragile and suffer from mechanical stress during manipulation and/or mounting. This can lead to impairment and even complete loss of diffraction quality. **XtalTool** was developed to minimize the handling steps of crystals in order to obtain the best possible diffraction data^[1].

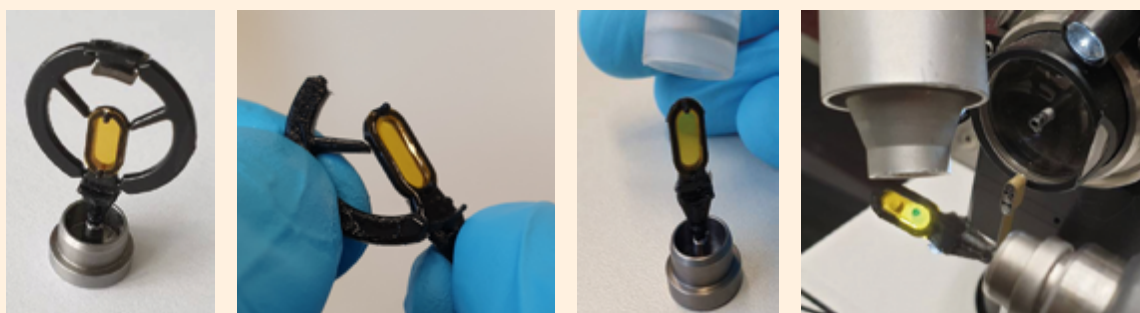
1. XtalTool is used as a cover slide for hanging drop crystallization



2. Crystal manipulation such as ligand soaking or cryoprotection is performed in a gentle way directly on the sample holder

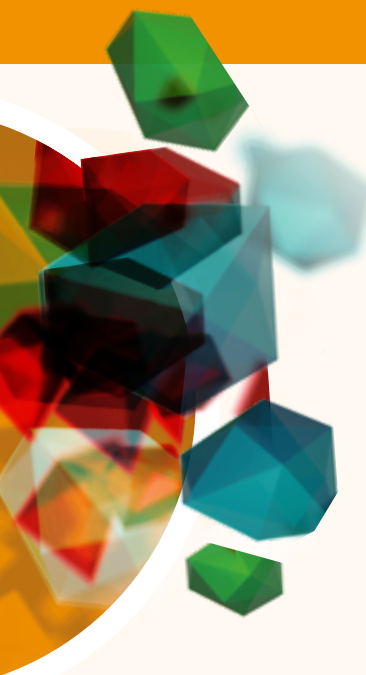


3. X-ray diffraction data are collected *in-situ* at ambient or cryo temperature



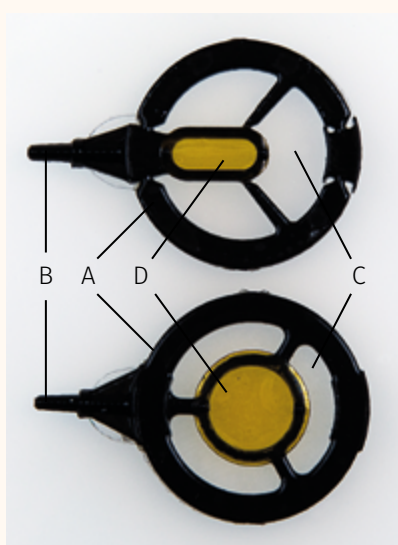
XtalTool

The ALL-in-ONE Sample Holder



One technology – two designs

The patent-pending XtalTool consists of a round black plastic support (A) with an outer diameter of 18 or 22 mm and an extension (B) that fits into a customized goniometer base. A transparent removable COC film (C) tightly seals the well during crystallization. An inner X-ray transparent polyimide film (yellow) with 5 µm pores (D) enables a gentle crystal soaking procedure by diffusion and serves as crystal support during data collection.



XtalTool HT with predetermined breaking points at the outer frame is compatible with robot assisted sample mounting. It is available in 22 mm diameter (Cat.-No. X-XT-103) to fit the Crystalgen SuperClear Plates and in 18 mm diameter (Cat.-No. X-XT-104) to fit the smaller Greiner Combo Plates with SBS footprint.

The classic **XtalTool** with 22 mm diameter (Cat.-No. X-XT-101) can be used with Crystalgen SuperClear Plates and is manually mounted on the goniometer.

Product	Cat.-No.	Amount
XtalTool HT 22 mm	X-XT-103	20 pcs.
XtalTool HT 18 mm	X-XT-104	20 pcs.
XtalTool Bases	X-XT-105	20 pcs.
XtalTool	X-XT-101	24 pcs. + 1 Base
XtalTool Soaking Kit	X-XT-102	1 Kit

XtalTool is unique on the market, it was developed by the HZB MX-group at BESSY II (AG Weiss).

Reference:

[1] Feiler *et al.* (2019) An All-in-one Sample Holder for Macromolecular X-ray Crystallography with Minimal Background Scattering. *J. Vis. Exp.* **149**:e59722.

