

The EU BIOXHIT Standard Test Crystal

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The standard test crystal is intended to provide an automated, fast and robust procedure for identifying potential problems in the complex hardware and software infrastructure of modern protein crystallographic (PX) synchrotron beamlines.

A quick test dataset should be collected whenever changes have been made to the hardware or problems are suspected. Indeed, for highly automated pipelines the first crystal in the dewar could be a test crystal in case the robot drops it! The test crystal should have high symmetry so that a short rotation about a single axis suffices to collect redundant data, the crystals should be easy to obtain and freeze reproducibly giving a small mosaic spread. The cubic form of insulin fulfils all these conditions and has been used in our tests so far, however we are also looking for possible inorganic test crystals for Se-MAD beamlines.

The diagnostics should be independent of the data integration software employed, so as a first step we have compared the processing of cubic insulin data using the widely used programs XDS, MOSFLM/SCALA and HKL2000. We will present our experiences with test crystal data collected on a number of the participating beamlines in the BIOXHIT consortium.

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