


Methods, IOCBC, Einsle

<h2 style="text-align: center;">High-Throughput Protein Crystallization and Imaging</h2> <p style="text-align: center;"><i>Protein Crystallography</i></p>	<p>Model:</p> <p>Unit and Room:</p> <p>Responsible:</p> <p>Further information:</p>	<p><i>Rigaku Phoenix RE, Alchemist II, Minstrel HT UV, Gallery 700, Douglas Instruments Oryx Nano</i></p> <p><i>Biochemistry, 9th floor, R. 910</i></p> <p><i>Dr. Stefan Gerhardt, 203 5970</i></p> <p><i>http://portal.uni-freiburg.de/xray/equipment</i></p>
<p>Short Description:</p> <p>Protein crystallization generally involves sparse matrix screening for suitable crystallization conditions in a large number of individual experiments on SBS-format multiwell plates. The setup consists of nanoliter dispensers (Oryx Nano, Phoenix RE) for experiment setup and a temperature-controlled incubation system with automated, scheduled imaging (Minstrel/Gallery). Crystallization screens can be designed on-screen and passed on to a liquid handling system (Alchemist II) for production. External collaborators can monitor their crystallization experiments through a web interface.</p>	<p>Picture of the Equipment</p> 	
<p>Available Experiments/Techniques:</p> <p>Crystallization experiments by hanging or sitting drop vapour diffusion or microbatch are prepared using 100-300 nl of sample per drop and are incubated at 4°C or 20°C. Fine screens can be designed around initial hits and pipetted automatically.</p>		
<p>Special Equipment:</p> <p>The minstrel imager includes a UV camera for identification of the UV fluorescence of protein vs. salt crystals.</p>		
<p>Measurements on the equipment are currently done by:</p>	<p><input type="checkbox"/> Students</p> <p><input type="checkbox"/> Students after Introduction</p> <p><input checked="" type="checkbox"/> Students after extensive training</p> <p><input checked="" type="checkbox"/> Trained scientific service personal</p>	
<p>Recent Publications, where this instrument was important (optional): Give citation</p>		
<p>Typical problems that may be solved with this instrument:</p>	<ul style="list-style-type: none"> - <i>Semi-automated screening for crystallization conditions.</i> - <i>Inspection of crystal plates available through web interface</i> - <i>Design and automated preparation of fine screens for optimization of crystallization</i> 	