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Serial X – Simple Solutions for Serial Synchrotron Crystallography

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Serial X aims to expand of the use of serial crystallography across the academic and industrial life-science community by introducing low cost, flexible and easy to use solutions to the problem of sample delivery in serial crystallography experiments at synchrotron radiation facilities. These solutions were invented in ProtonPump, the ERC Advanced Grant awarded to Richard Neutze, which applies time-resolved serial crystallography to observe structural changes in the enzyme cytochrome c oxidase. Serial crystallography is going through a period of rapid development and the number of scientific users of this method has the potential to grow by up-to two orders of magnitude. This potential will never be realized if the current lack of standardization in sample delivery continues, which is prohibitively expensive and is often unreliable. Serial-X will solve this problem by developing and bringing to market standardized, low-cost, flexible and easy-to-use solutions for sample delivery in serial crystallography studies at synchrotron radiation sources. With the support of ERC proof-of-concept grant to Richad Neutze, Serial X has developed low-cost products supporting both flow cell1 and fixed target2 approaches to serial crystallography that are mounted upon standard magnets used at all conventional macromolecular X-ray crystallography synchrotron-based beamlines. This will remove the greatest obstacle currently preventing scientists from using serial crystallography for their own research or for structure based drug-design within a pharmaceutical drug discovery context.

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