## Macromolecular Crystallography at Room Temperature: Wavelength Dependence Radiation Sensitivity and Damage

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Biological samples are known to be strongly radiation sensitive and suffer from radiation damage during room temperature X-ray data collection even at cryogenic temperatures (100K). One of the factors affecting the rate of radiation damage on biological samples is mainly to use of the wavelength for 3D structural analysis. Here we attempt to determine the wavelength dependence effects of radiation on biological samples. Our results show that radiation sensitivity presents a direct dependence with the wavelength. Several derivatives from Hen Egg White Lysozyme crystals were grown in the gel by the Counter Diffusion Method in standard Hampton Research Granada boxes. Synchrotron radiation data were recorded at the X6A beam line of the National Synchrotron Light Source at room temperature. A threshold wavelength was determined for each sample derivative for which radiation sensitivity and damage significantly increased.

We would like to thank the NSLS staff for their assistance without which this work could not have been accomplished. The support of the U.S. DOE Cooperative Research Program for SESAME is greatly appreciated. X6A is funded by the NIGMS, contract #Y1 GM-0080. The NSLS is supported by the U.S. DOE, contract #DE-AC02-98CH10886.

Keywords: macromolecular crystallography, radiation damage, wavelength