

## Publication

### Imaging protein three-dimensional nanocrystals with cryo-EM

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Flash-cooled three-dimensional crystals of the small protein lysozyme with a thickness of the order of 100 nm were imaged by 300 kV cryo-EM on a Falcon direct electron detector. The images were taken close to focus and to the eye appeared devoid of contrast. Fourier transforms of the images revealed the reciprocal lattice up to 3 angstrom resolution in favourable cases and up to 4 angstrom resolution for about half the crystals. The reciprocal-lattice spots showed structure, indicating that the ordering of the crystals was not uniform. Data processing revealed details at higher than 2 angstrom resolution and indicated the presence of multiple mosaic blocks within the crystal which could be separately processed. The prospects for full three-dimensional structure determination by electron imaging of protein three-dimensional nanocrystals are discussed.

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