



Full wwPDB EM Validation Report ⓘ

Mar 10, 2026 – 01:29 AM UTC

EMDB ID : EMD-10409
Title : In situ cryo-electron tomogram from *Chlamydomonas reinhardtii* of a proteasome cluster at the endoplasmic reticulum
Authors : Albert, S.; Schaffer, M.; Baumeister, W.; Engel, B.D.
Deposited on : 2019-10-27
Resolution : Not provided

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMTomogramValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

EMDB validation analysis : 0.0.1.dev132
Validation Pipeline (wwPDB-VP) : 2.49

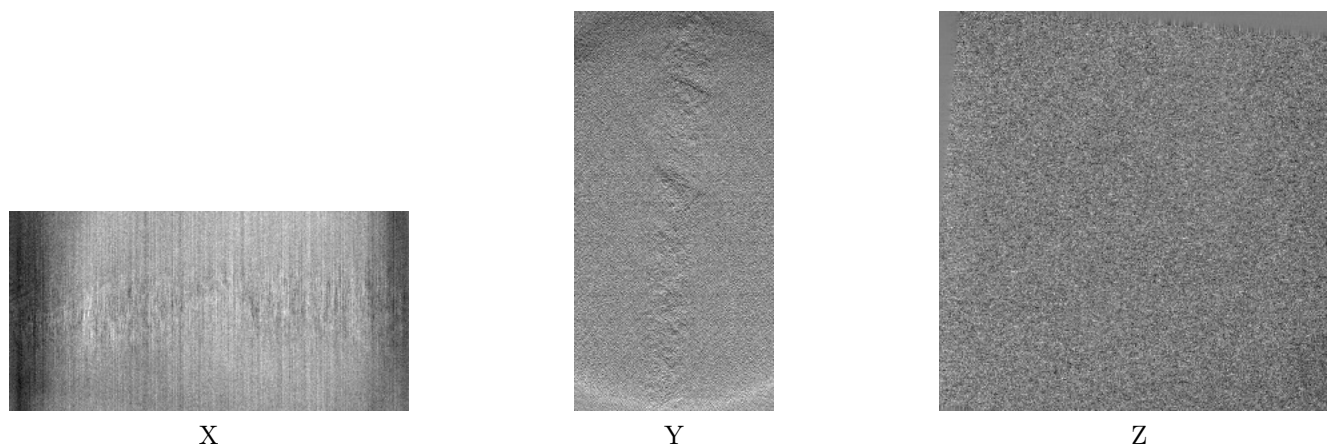
1 Experimental information

| Property | Value | Source |
|--------------------------------------|-----------------------------|-----------|
| EM reconstruction method | TOMOGRAPHY | Depositor |
| Imposed symmetry | Not Provided | |
| Number of tilted images used | 60 | Depositor |
| Resolution determination method | Not provided | |
| CTF correction method | Not provided | |
| Microscope | FEI TITAN KRIOS | Depositor |
| Voltage (kV) | 300 | Depositor |
| Electron dose ($e^-/\text{\AA}^2$) | 100.0 | Depositor |
| Minimum defocus (nm) | 4.6 | Depositor |
| Maximum defocus (nm) | 5.6 | Depositor |
| Magnification | 42000.0 | Depositor |
| Image detector | GATAN K2 SUMMIT (4k x 4k) | Depositor |
| Maximum voxel value | 76.000 | Depositor |
| Minimum voxel value | -89.000 | Depositor |
| Average voxel value | 2.581 | Depositor |
| Voxel value standard deviation | 10.353 | Depositor |
| Recommended contour level | Not applicable | |
| Tomogram size (\AA) | 12695.04, 12695.04, 6347.52 | wwPDB |
| Tomogram dimensions | 928, 928, 464 | wwPDB |
| Tomogram angles ($^\circ$) | 90.0, 90.0, 90.0 | wwPDB |
| Grid spacing (\AA) | 13.68, 13.68, 13.68 | Depositor |

2 Tomogram visualisation [i](#)

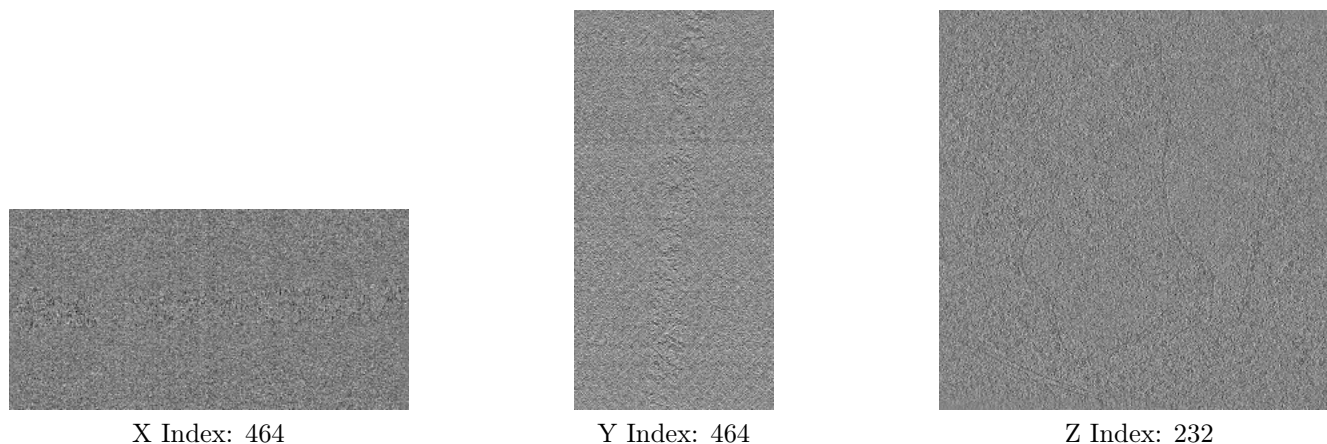
This section contains visualisations of the EMDB entry EMD-10409. These allow visual inspection of the internal detail of the tomogram and identification of artifacts.

2.1 Orthogonal projections [i](#)



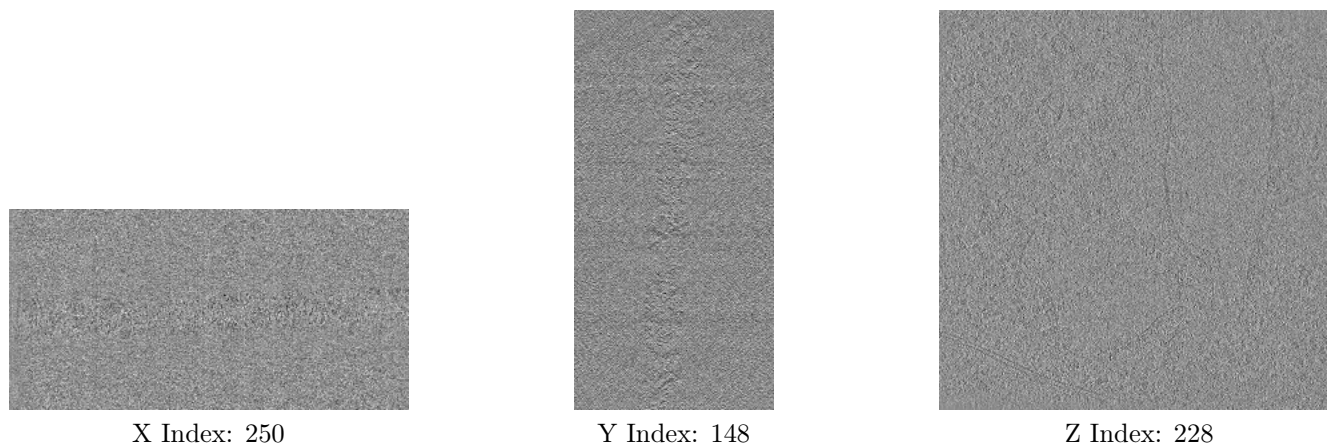
The images above show the tomogram projected in three orthogonal directions.

2.2 Central slices [i](#)



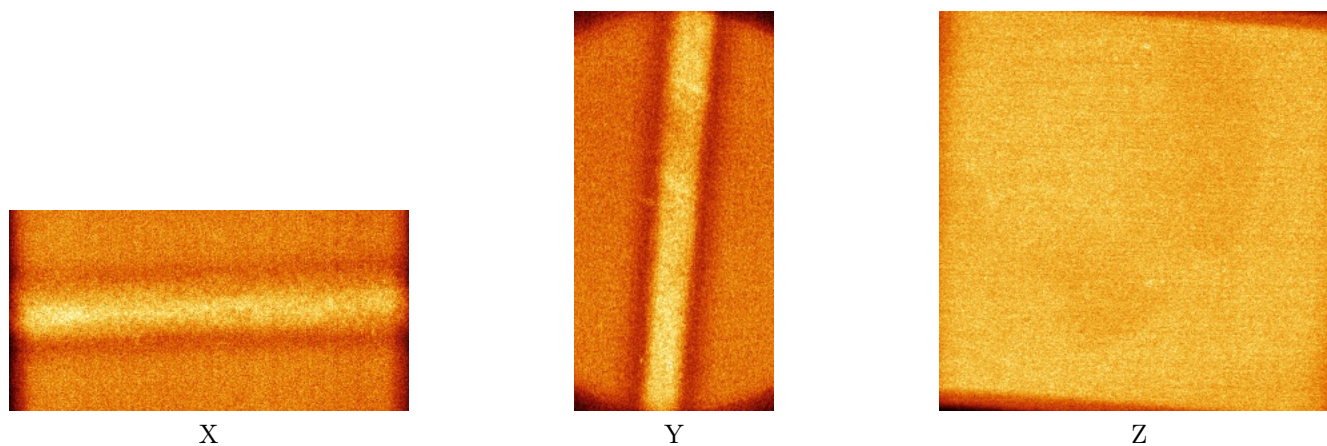
The images above show central slices of the tomogram in three orthogonal directions.

2.3 Largest variance slices [i](#)



The images above show the largest variance slices of the tomogram in three orthogonal directions.

2.4 Orthogonal standard-deviation projections (False-color) [i](#)



The images above show the tomogram projected in three orthogonal directions.

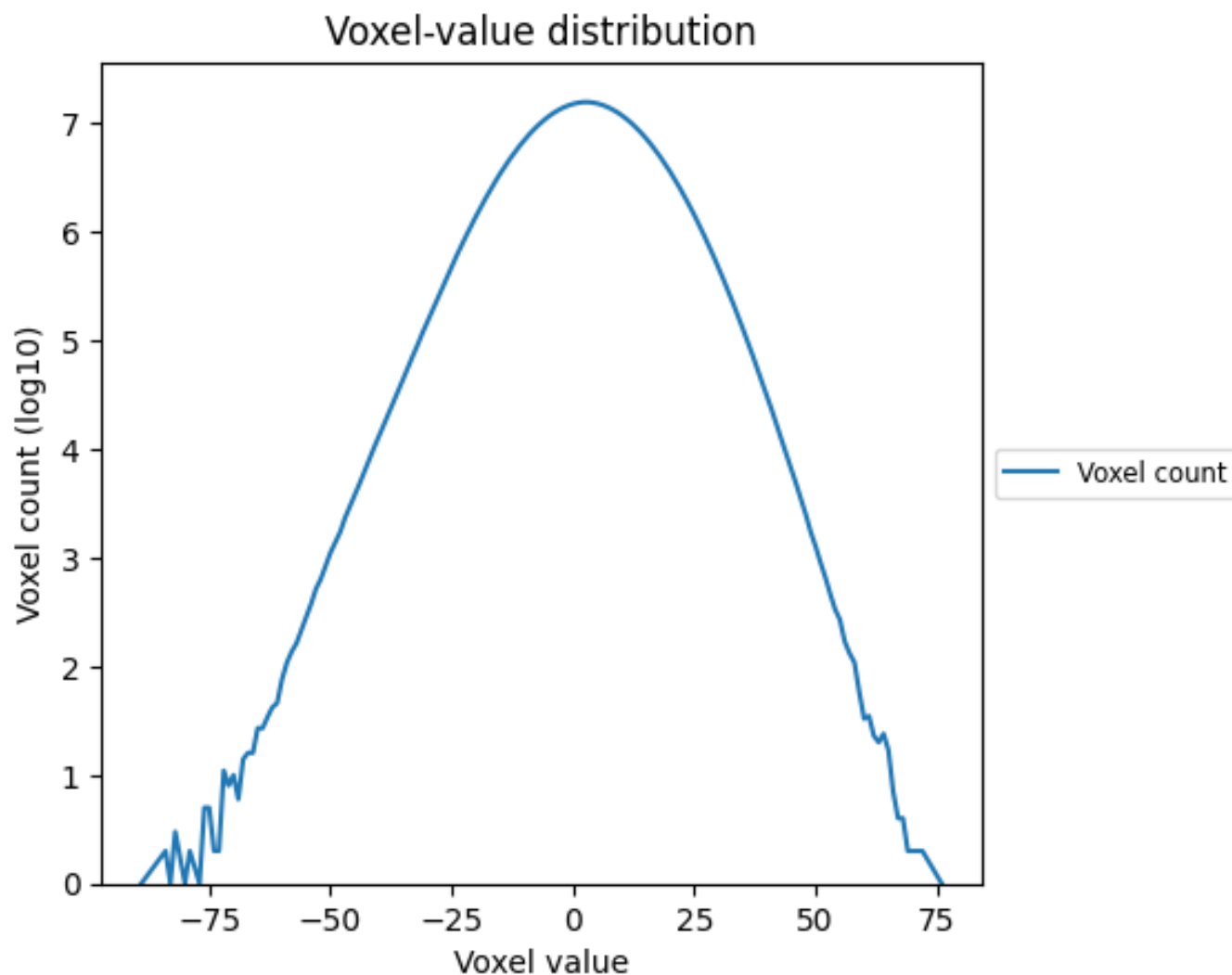
2.5 Mask visualisation [i](#)

This section was not generated. No masks/segmentation were deposited.

3 Tomogram analysis [i](#)

This section contains the results of statistical analysis of the tomogram.

3.1 Voxel-value distribution [i](#)



The voxel-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic.