

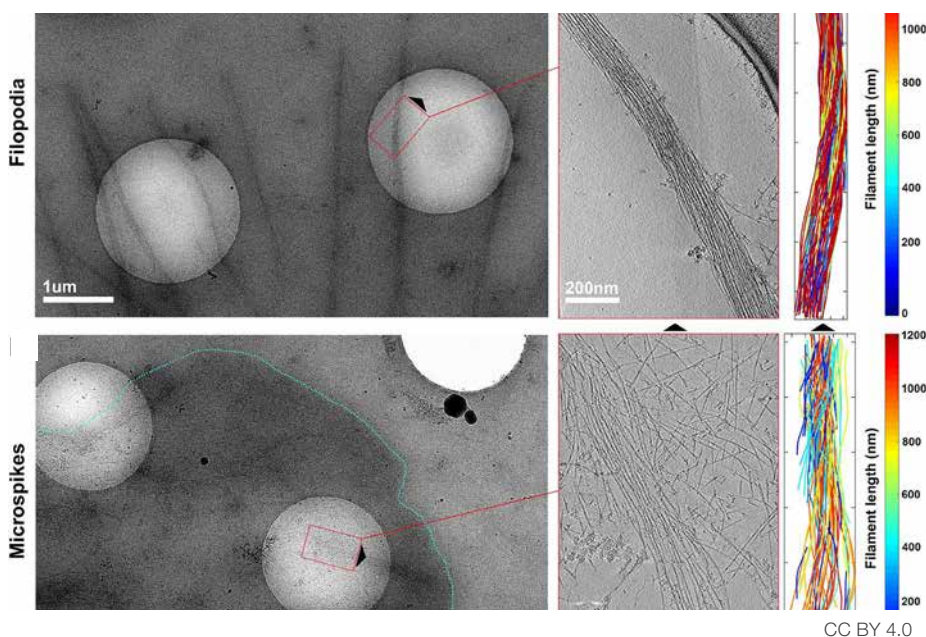
Selected Publications

Cryo-Tomography with 200kV Cryo-TEM

The Thermo Fisher Scientific Glacios and Talos Arctica Cryo-Transmission Electron Microscopes (cryo-TEMs) acquire 3D snapshots of the cellular interior and visualize protein complexes within their crowded physiological environments. Such high-resolution 3D images of the interior of cells provide new insights into cellular function and shed light on the arrangement and structure of native protein complexes.

Cryo-Tomography with 200kV Thermo Scientific Glacios

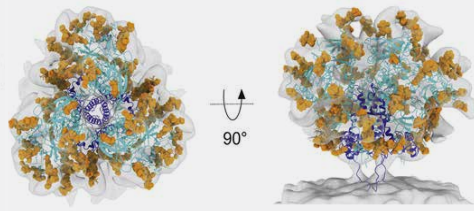
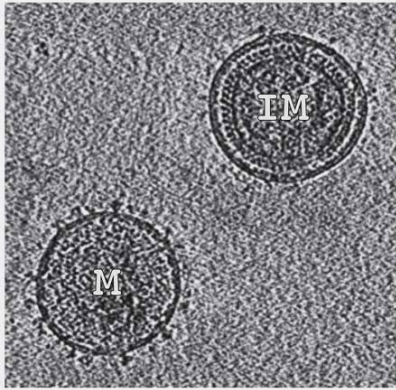
The Thermo Scientific™ Glacios™ cryo-TEM features 200 kV XFEG optics and the industry-leading Autoloader (cryogenic sample manipulation robot). Pairing the Glacios Cryo-TEM with the Thermo Scientific Selectris™ X Imaging Filters can be used as a complete solution for single particle analysis data acquisition, MicroED, and cryo-electron tomography.



Dimchev G, Behnam A, Fäßler, Falcke M et al. (2021) **Computational toolbox for ultrastructural quantitative analysis of filament networks in cryo-ET data.** *J. Structural Biology* 213: 107808. [DOI: 10.1016/j.jsb.2021.107808](https://doi.org/10.1016/j.jsb.2021.107808)

Keywords: actin cytoskeleton, lamellipodia, filopodia, cryo-electron tomography, image processing, ultrastructural analysis

Structural analysis of membrane-bound HIV Env from IMMATURE and MATURE viral particles



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Mangala Prasad V, Leaman, DP, Levendahl, KN, et al. (2022) **Cryo-ET of Env on intact HIV virions reveals structural variation and positioning on the Gag lattice.** *Cell* 185: 641 - 653.e17.

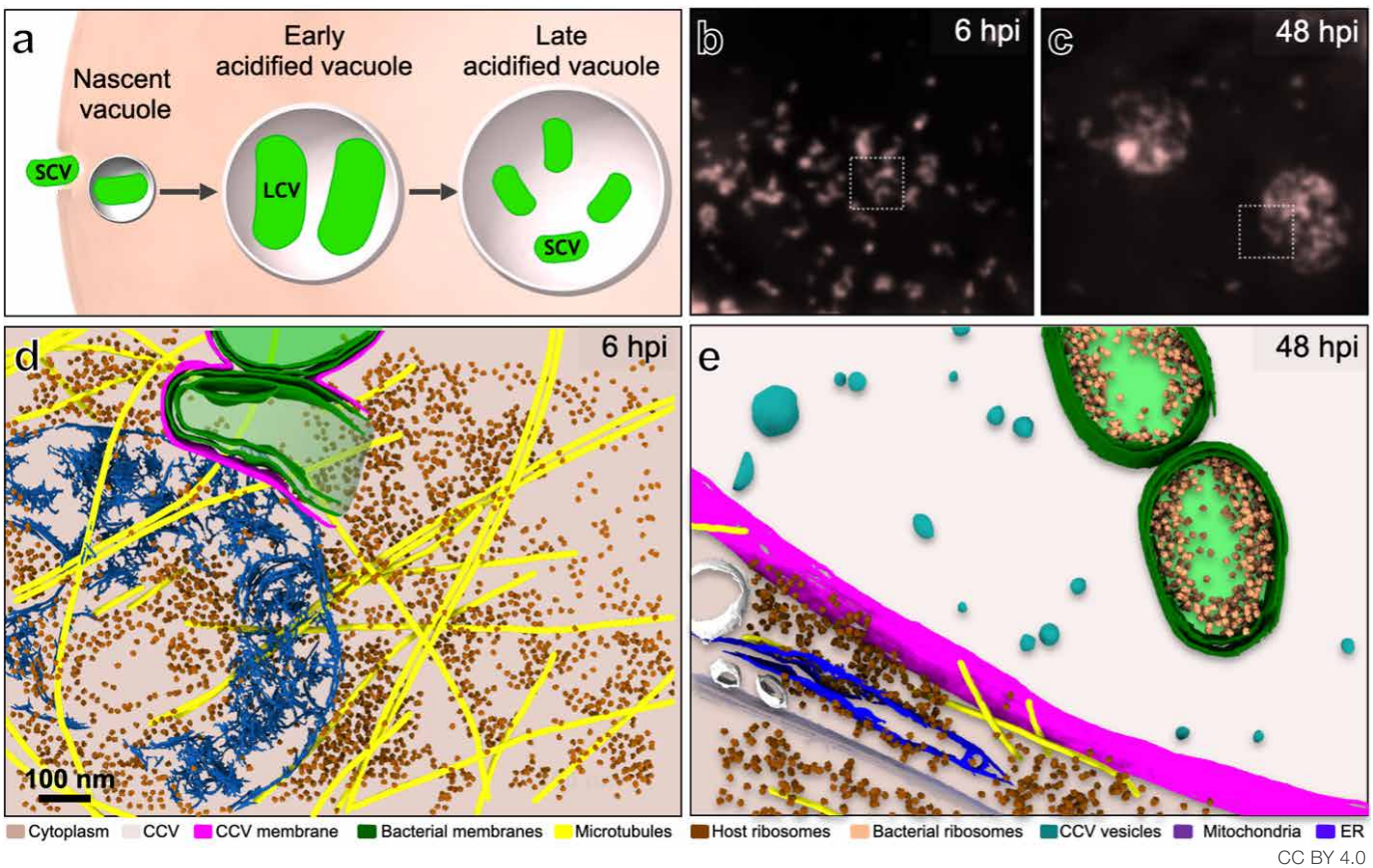
[DOI: 10.1016/j.cell.2022.01.013](https://doi.org/10.1016/j.cell.2022.01.013)

Keywords: HIV Env glycoprotein, HIV assembly, Gag-Env interaction, cryo-electron tomography, sub-tomogram averaging, hydrogen/deuterium-exchange mass spectrometry, broadly neutralizing antibody, virus structure, vaccine design

Pepe A, Pietropaoli S, Vos, M, et al. (2021) **Tunneling nanotubes provide a novel route for SARS-CoV-2 spreading between permissive cells and to non-permissive neuronal cells.** *bioRxiv* 2021.11.15.468633.

[DOI: 10.1101/2021.11.15.468633](https://doi.org/10.1101/2021.11.15.468633)

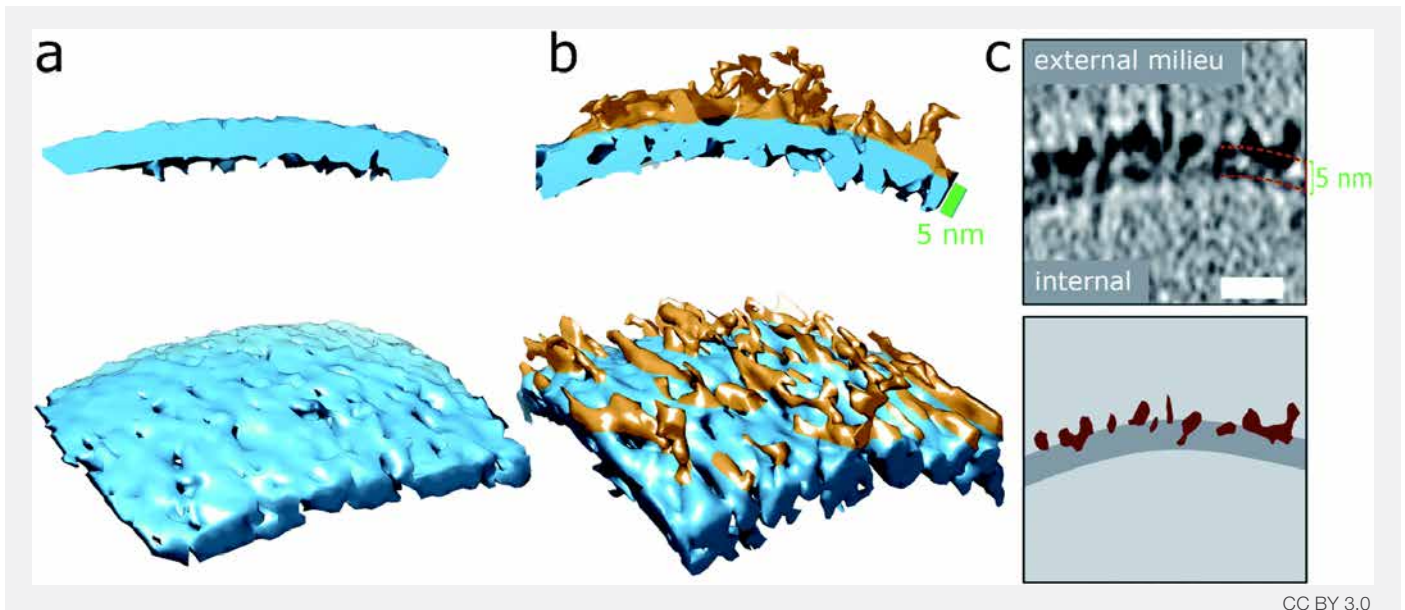
Keywords: cell biology, SARS-CoV-2, neuronal cells



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Park D, Steiner S, Shao M et al. (2022) **Developmental transitions coordinate assembly of the Coxiella burnetii Dot/Icm type IV secretion system.** *bioRxiv* 2022.05.29.493899. [DOI: 10.1101/2022.05.29.493899](https://doi.org/10.1101/2022.05.29.493899)

Keywords: microbiology, bacterial pathogen, intracellular replication and transmission



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Tian Y, Liang R, Kumar A et al. (2021) **3D-visualization of amyloid- β oligomer interactions with lipid membranes by cryo-electron tomography.** *Chem. Sci* 12: 6896-6907. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8153238/>

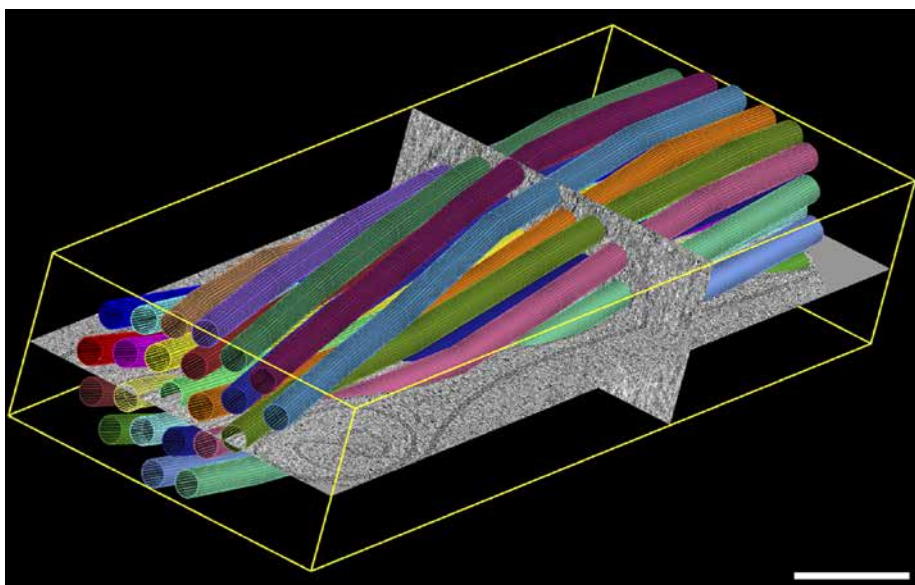
Keywords: amyloid- β , amyloid fibrils, A β cytotoxicity, Alzheimer's disease

Sauvanet C, Lemos M, Bezault A et al. (2022) **ACE2 nanoparticles prevent cell entry of SARS-CoV-2.** *bioRxiv* 2022.05.05.490805. [DOI: 10.1101/2022.05.05.490805](https://doi.org/10.1101/2022.05.05.490805)

Keywords: cell biology, ACE2 nanoparticles, SARS-COV-2

Cryo-Tomography with 200kV Thermo Scientific Talos Arctica

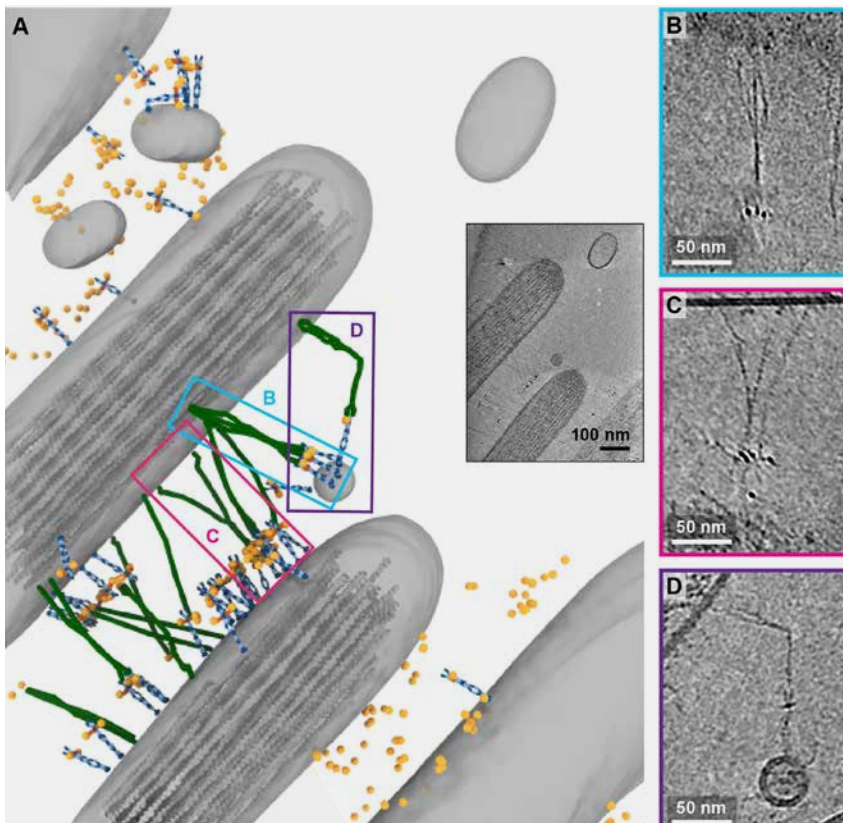
The Thermo Scientific Talos™ Arctica Cryo-TEM is a 200kV FEG scanning and transmission electron microscope (S/TEM) built for delivering high-resolution 3D characterization of biological samples and biomaterials in cell biology, structural biology, and nanotechnology research. The Talos Arctica S/TEM enables scientists to quickly obtain better insight and understanding of macromolecular structures, cellular components, cells, and tissues in three dimensions.



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Paul DM, Mantell J, Borucu U et al. (2020) ***In situ* cryo-electron tomography reveals filamentous actin within the microtubule lumen.** *J Cell Biol* 219: e201911154. [DOI: 10.1083/jcb.201911154](https://doi.org/10.1083/jcb.201911154)

Keywords: cytoskeleton, structural biology

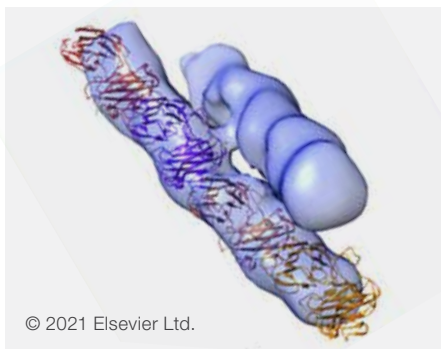


Elferich, J, Clark S, Ge J et al. (2021) **Molecular structures and conformations of protocadherin-15 and its complexes on stereocilia elucidated by cryo-electron tomography.** *eLife* 10: e74512.

[DOI: 10.7554/eLife.74512](https://doi.org/10.7554/eLife.74512)

Keywords: neuroscience, structural biology, molecular biophysics

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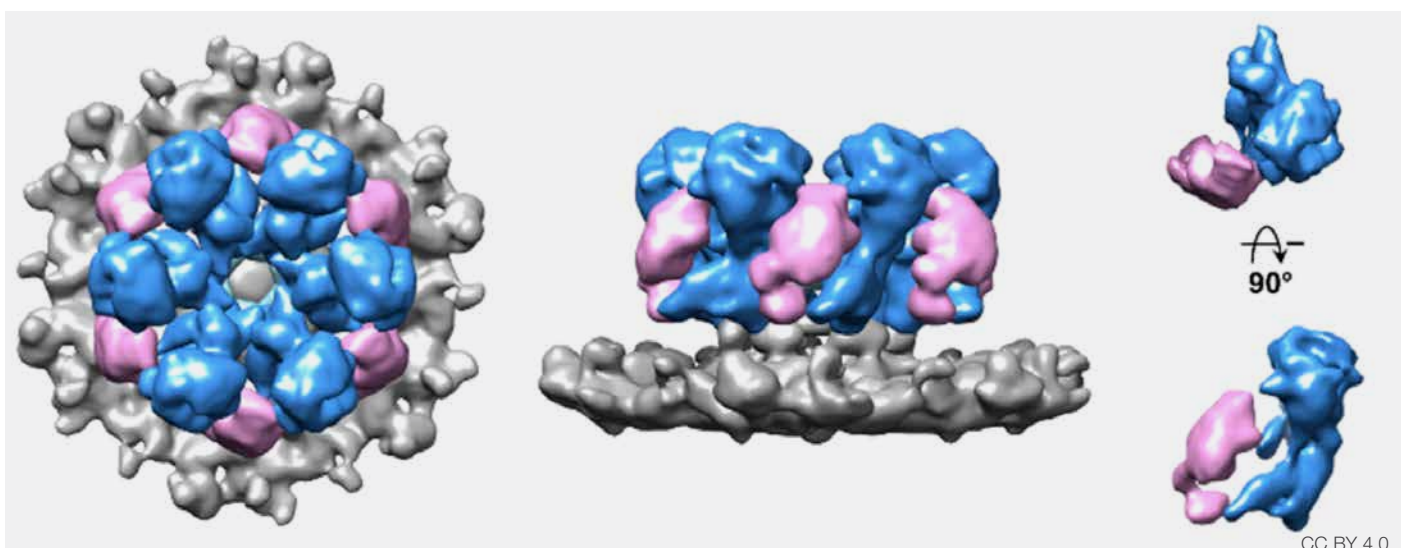


Turk LS, Kuang X, Dal Pozzo V et al. (2021) **The structure-function relationship of a signaling-competent, dimeric Reelin fragment.** *Structure* 29: 1156–1170.e6.

[DOI: 10.1016/j.str.2021.05.012](https://doi.org/10.1016/j.str.2021.05.012)

Keywords: Reelin, dimer, ApoER2, VLDLR cryo-ET, SAXS, AUC, high-content analysis

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Jiménez-Ortigosa C, Jiang J, Chen M et al. (2021) **Preliminary structural elucidation of β -(1,3)-glucan synthase from *Candida glabrata* using cryo-electron tomography.** *J Fungi* 7(2): 120. [DOI: 10.3390/jof7020120](https://doi.org/10.3390/jof7020120)

Keywords: *Candida glabrata*, glucan synthase (GS)

Leung MR, Roelofs MC, Ravi R et al. (2021) **The multi-scale architecture of mammalian sperm flagella and implications for ciliary motility.**

EMBO J 40: e107410. DOI: [10.15252/embj.2020107410](https://doi.org/10.15252/embj.2020107410)

Keywords: centrioles, cryo-FIB milling, motile cilia, sperm

Leung MR, Zenezini Chiozzi R, Roelofs MC, et al (2021) **In-cell structures of conserved supramolecular protein arrays at the mitochondria-cytoskeleton interface in mammalian sperm.** *Proc Natl Acad Sci USA* 118(45). DOI: [10.1073/pnas.2110996118](https://doi.org/10.1073/pnas.2110996118)

Keywords: mitochondria–cytoskeleton, contacts, cryo-FIB milling, cross-linking, mass spectrometry, subtomogram averaging

Levitan O, Chen M, Kuang X et al. (2019) **Structural and functional analyses of photosystem II in the marine diatom *Phaeodactylum tricornutum*.** *Proc Natl Acad Sci USA* 116: 17316. DOI: [10.1073/pnas.1906726116](https://doi.org/10.1073/pnas.1906726116)

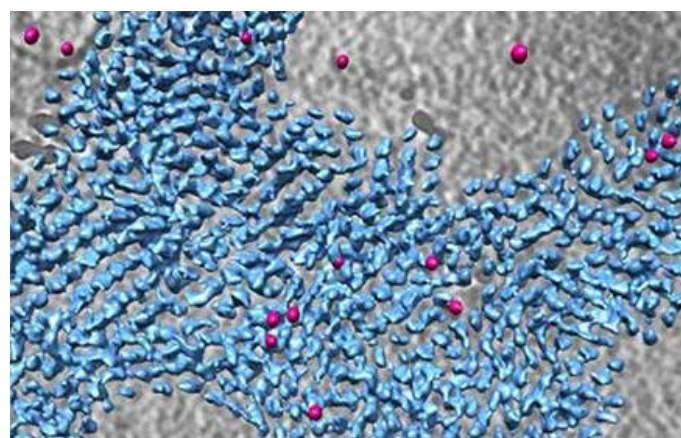
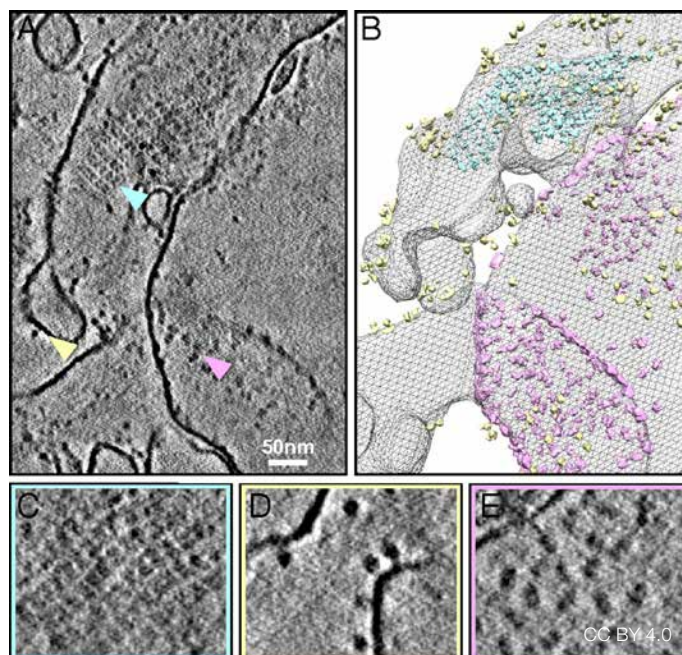
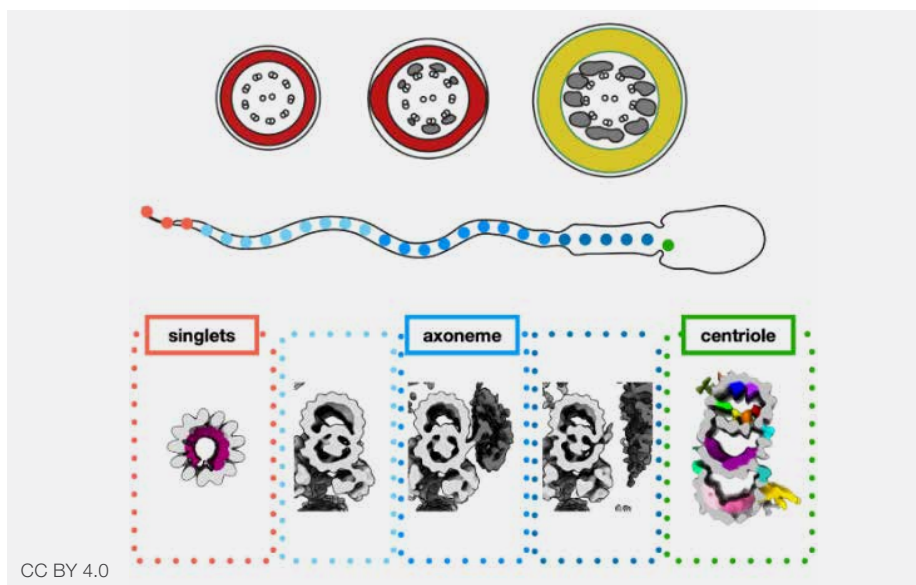
Keywords: diatom photosystem II, thylakoid membranes, functional, absorption analysis

Jiang J, Cheong KY, Falkowski PG et al. (2021) **Integrating on-grid immunogold labeling and cryo-electron tomography to reveal photosystem II structure and spatial distribution in thylakoid membranes.** *J Structur Biol* 213: 107746. DOI: [10.1016/j.jsb.2021.107746](https://doi.org/10.1016/j.jsb.2021.107746)

Keywords: immunogold labeling, protein identification, spatial distribution, photosystem II (PSII), photosynthesis

Berger C, Ravelli RBG, López-Iglesias C et al (2021) **Endocytosed nanogold fiducials for improved in-situ cryo–electron tomography tilt-series alignment** 213: 107698. DOI: [10.1016/j.jsb.2021.107698](https://doi.org/10.1016/j.jsb.2021.107698)

Keywords: cryo-focused-ion beam lamella, tilt-series alignment, nanogold fiducials, bovine serum albumin, bsa-gold



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