DESCRIPTION

The *Journal of Structural Biology* publishes papers dealing with the structural analysis of living material at every level of organization by all methods that lead to an understanding of biological function in terms of molecular and supramolecular structure.

Techniques covered include:

- Light microscopy including confocal microscopy
- All types of electron microscopy
- X-ray diffraction
- Nuclear magnetic resonance
- Scanning force microscopy, scanning probe microscopy, and tunneling microscopy
- Digital image processing
- Computational insights into structure

The field covered by the journal extends from the structural organization of cells and tissues, their membranes, compartments, organelles and supramolecular assemblies, to the structure and conformation of proteins and nucleic acids from the molecular to the atomic level. !!! Important information for NIH authors !!!

AUDIENCE

Biochemists, crystallographers, cell biologists, structural biologists

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Virus structure and assembly, cryo-EM

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Cell division, mitosis, X-ray crystallography, biochemistry, biophysics, electron microscopy

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muscle thick filaments, myosin interacting-heads motif (IHM)

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Fibrous Proteins; muscle: collagen; intermediate filaments; structure; sequence analyses.

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Antimalarial drugs, light and electron microscopy, malaria parasite-infected red blood cells, infectious agents, protein trafficking

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Cryo-EM, cellular ultrastructure, structural biology, electron tomography, 3DEM

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Membrane transporters, mechanisms of substrate recognition and transport

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INTRODUCTION
The Journal of Structural Biology (J. Struct. Biol., JSB) publishes papers dealing with the structural analysis of biological matter at all levels of organization and the functional connotations of such observations. The field covered by the journal extends from individual macromolecules to cells and tissues with emphasis on the supramolecular (e.g. complexes and machines) and subcellular (e.g., membranes, compartments, cytoskeleton) levels of the structural hierarchy.

Novel applications of and methodological innovations in electron microscopy, X-ray diffraction, probe microscopy, and light microscopy as well as aspects of computational biology image processing, bioinformatics and structural prediction, and other biophysical techniques yielding structural information are of interest to the journal. In the context of structural cell biology, papers dealing with cellular architecture and dynamics are particularly welcomed. We see biomineralization as an important emerging area.

Preference will be given to research that correlates structural results with functional, biochemical, biophysical, immunological, or genetic data on the system under study. Purely descriptive contributions should deal with the discovery of novel structural entities of biological significance or novel insights from innovative imaging modalities. A limited number of reviews (usually invited) will be published to keep the reader abreast of recent progress in the various fields of structural biology and advances in methodology.

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Crystallization Notes, Technical Notes and Structure Reports
In addition to regular full-length papers reporting crystal structures and novel methods and/or mechanisms of crystallization, the Journal of Structural Biology publishes three kinds of short communications - Crystallization Notes, Technical Notes and Structure Reports.

The primary consideration for eligibility as a Crystallization Note is that the observations reported should have sufficient significance and originality to merit publication separate from the structure. That significance/originality should be described in the letter of submission. At least one of the following criteria must apply:

i. significant novelty in crystallization method or expression strategy;
ii. crystals of a membrane protein or large macromolecular complex;
iii. 2D crystals (planar or helical/tubular) for EM analysis;
iv. other significant novelty.
For studies in which expression and crystallization have resulted from application of standard procedures, this information is more appropriately reported in the Materials and Methods section of the paper describing structure.

A Technical Note is similar to a Crystallization Note in format and length and gives a succinct description of a major methodological innovation in a domain other than crystallization.

Structure Reports concisely document macromolecular crystal structures, including those emanating from structural genomics. Where no biological role is yet determined, these reports can be presented without such connections. In addition to appropriate quality of the reported structure, it is essential that the procedures used to prepare the protein and to determine the structure should be repeatable with the information provided. The manuscript should begin by describing the source of the protein, the means used to screen for or devise crystallization conditions, and the crystallization procedures and conditions and should include a table with the information listed in Table A.

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