GUIDELINES FOR EDITORIAL DECISIONS

The Journal of Biological Chemistry encourages the submission of manuscripts based on original research that are judged to make a novel and important contribution to understanding the molecular and cellular basis of biological processes. Manuscripts that fall outside these editorial guidelines may be declined without full review.

**Cell cycle and apoptosis**

Manuscripts that report significant advances in understanding the cell cycle or apoptosis. Appropriate FACS analysis procedures will include multiple parameters and/or time points to establish biological states.

**Computational biochemistry and biomolecular networks**

Manuscripts describing computational analyses in structural biology, enzyme kinetics, systems biology and bioinformatics that provide significant new insights into a molecular or cellular process or its regulation.

Manuscripts that describe the results of molecular modeling such as molecular dynamics simulations will normally include experimental results that support the conclusions.

**Enzymology**

Manuscripts that provide new insight into catalytic mechanisms of enzymes.

Manuscripts that report three-dimensional structures of enzymes, including new folds, and that provide insight into understanding the functions of enzymes.

Manuscripts that describe the purification and characterization of novel enzymes or proteins that have not been described previously in other tissues or organisms.

**Experimental uncertainty and reproducibility**

Results should be accompanied by explicit analyses of experimental uncertainty and reproducibility. Acceptable analyses of experimental uncertainty of numerical data include the standard deviation, the standard error, or the mean and range of values obtained from replicate experiments, as appropriate.

Bar graphs and scatter plots (X,Y plots) should include error bars, and the meaning of the error bars should be defined in the text. Plots that include lines that represent fits of experimental data must be accompanied by the equation used to calculate the fit, the values of the fit parameters, and statistics that characterize the quality of the fit.

**Functional genomic, metabolomic and proteomic analysis**

Manuscripts that use genome-, metabolome-, or proteome-scale functional analysis by differential display, microarray, mass spectrometry, or other methods to provide novel insight into a biological process or its regulation.

**Glycobiology**

Manuscripts that describe the structure, function and metabolism of novel oligosaccharides and glycoconjugates.

**Imaging studies**

Manuscripts that report the elucidation of biological processes using imaging experiments that include appropriate analyses of experimental reproducibility and uncertainty.

**Macromolecular interactions**

Manuscripts that describe biochemical analyses of interactions between macromolecules or between macromolecules and small ligands (e.g., biophysical methods such as NMR, hydrodynamics, or isothermal calorimetry, or results of two-hybrid screens, co-immunoprecipitation, gel mobility shift, or related assays) and provide information about the functional consequences of the interactions as they occur between partners expressed from the endogenous genes in relevant cell lines or tissues.
Methodology and techniques
Manuscripts that report the development of a new technique or methodology and apply it to obtain a novel and significant insight into a biological process.

Molecular bases of disease
Manuscripts that contribute novel and significant insights into biochemical processes that form the molecular bases of disease.

Mutational analysis of proteins
Manuscripts that report that mutation of a protein alters its function and provide clear evidence regarding the process by which the function is altered.

Neurological biology
Manuscripts that provide significant insight into the molecular bases of neurological disorders, biochemical basis of neurophysiology, electrophysiology, neurodevelopment, synapse formation, addiction, behavior, or psychological/psychiatric disorders, with the major emphasis of the study being on the molecular or cellular aspects rather than exclusively on whole organisms or whole system response.

Manuscripts that provide novel molecular insights into the genesis, identification, differentiation, or maintenance of neural progenitor cells.

Pharmacology and Drug Discovery
Manuscripts that characterize in depth the actions of novel compounds (synthetic chemicals, defined natural products, or biologicals) and also provide significant new insights into structure-function relationships regarding the target and/or enhance our understanding of related biological processes.

Post-translational modification
Manuscripts that describe modification of a protein by a novel process or by a well-established process such as glycosylation, phosphorylation, fatty acylation, or prenylation and demonstrate the biological or biochemical significance of the modification or provide novel insight into the modification process.

Regulation of metabolism and gene expression
Manuscripts that provide significant insight into the underlying biochemical process of the regulation of metabolism and gene expression. Studies that assess the biological effects of changes in gene expression that are based on measures of RNA levels (e.g., microarrays, QT-PCR) that also have supporting evidence to confirm that the changes in RNA levels have functional consequences.

RNAi
Manuscripts that use RNA interference (RNAi) to probe biological processes should include appropriate controls as described in Nature Cell Biology 5, 489–490 (2003). Such controls may include use of siRNAs with one or two nucleotide changes from the target sequence, multiple siRNAs for the same target, and rescue by expression of target sequences refractory to siRNA.

Transcription and RNA processing
Studies that identify new regulatory elements and the factors that bind them and provide new and significant insights into processes of gene expression or regulation.

Manuscripts that identify methylated sites in a gene or promoter, or demonstrate that the methylation status of a gene correlates with gene expression, and provide new and significant insight into how methylation is controlled or how methylation controls gene expression.

Transgenics and knockouts
Manuscripts that report the generation of transgenic or knockout mutants that provide new insights into biological processes on a molecular or cellular level.