

The Data Must Be Accessible to All

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Science relies on data acquisition via well-described, rigorous, reproducible procedures; statistically defensible interpretation of these data; and transparent reporting of the interpretations and conclusions reached based on these data. Each of these steps must be communicated to the broader scientific community in such a way that others can critically evaluate the studies, draw conclusions based on the reported findings, design subsequent experiments, and replicate and extend those observations. The only way this is possible is through full disclosure of data so that they are readily accessible to readers. Journals must assume responsibility for ensuring that those data are made available and that the mechanism to access the data be cited in the same way that previous literature reports are cited. The publications of ASBMB (*Journal of Biological Chemistry*, *Journal of Lipid Research*, and *Molecular and Cellular Proteomics*) are joining several sister publications in adopting policy requirements that ensure these goals are met for all our content.

The policies being adopted by the three ASBMB publications adhere to recommendations articulated by the journal *Scientific Data* (1) and specifically apply to data availability statements and data citation. Data availability statements are now required and should indicate where the underlying data described in the manuscript are located. If all data are contained within the manuscript, then the statement should state so. For data sets that were generated and deposited into a publicly accessible repository for submission, the location and identifying information (accession numbers and/or DOIs) must be provided. If data are to be shared on request, then contact information for the individual who will provide the data must be provided. All data described in an article must be made available to any qualified investigator on request. Any software developed that is central to manuscript must be deposited into a repository that can assign it a DOI, which should be provided. If accession numbers or DOIs cannot be provided in a submitted manuscript, include placeholder language to indicate that the information will be made available after acceptance. The editorial office will contact authors for more information after acceptance. Any limitations to the sharing of data, code, and/or materials

should be stated in this section. More details about adherence to these policies are given ASBMB's Editorial Policies (2).

Data deposited in repositories from already published studies should be cited in the same way that literature references are cited in a manuscript. The details of formatting these data citations are provided in the Editorial Policies for the three ASBMB journals (2).

What will be achieved by the implementation of these policies? We are absolutely convinced that the quality of science carried out by scientists who publish in our journals will be elevated and the impact of reported science will be greatly enhanced because the rigor, transparency, reproducibility, and now access to the underlying data—the heart of any scientific study—will be held to high standards. Data deposition increases reproducibility and maximizes research outputs, and thereby impact, by making it easier for others to discover, validate, or re-analyze data. It also reduces the burden on authors to preserve and locate older data. Although not a goal unto itself, authors might note that articles reporting publicly available data are associated with increased citations (3).

The mechanism of citing data that have been deposited will now be regularized by data citation policies of ASBMB journals. Data citation is enabled by assigning data-persistent identifiers; in this way, deposition supports FAIR principles (Findable, Accessible, Interoperable, Reusable) as repositories allow access to data and associated metadata (1). Moreover, data citation ensures proper linking between publications and data sets by taking advantage of the current scholarly citation infrastructure that is used for literature references. By treating data as research objects through citation, not only are they more easily discoverable, but citation gives credit to data creators and gives data the same importance as a publication. Data citation signals that data should be well-curated, just like the scientific literature.

We embrace the movement toward rigor, reproducibility, and transparency in science supported by many funding agencies and publications, and we put before you, our readers and authors, the steps we are taking with ASBMB publi-

From the ‡Editor-in-Chief, *Journal of Biological Chemistry*; §Editors-in-Chief, *Journal of Lipid Research*; ¶Editor-in-Chief, *Molecular and Cellular Proteomics*

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cations to be guardians of these principles. If you have any questions regarding these policies, feel free to contact us at data@asbmb.org.

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