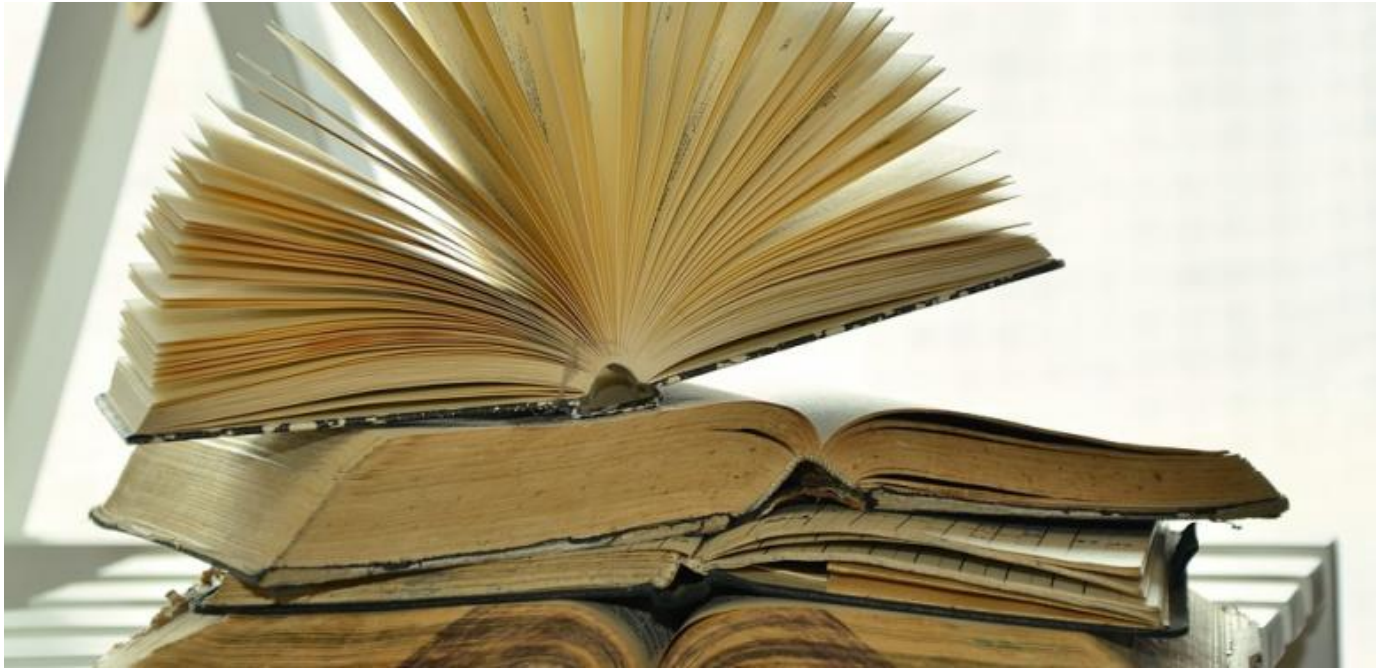


# Modern Journal Practices: What is Being Done and What You Should Do



Traditionally, journals have been read-only. Publishers would print out their volumes and ship them to their subscribers. Sharing was done in person, if at all, and there was little engagement. Now, however, there is a shift to reading nearly everything on the web. Journals, to stay alive and competitive, have needed to embrace modern trends.

Today, modern journals feature several common traits, the most common of which is free, public access to the articles it publishes. This will generally come in two forms – complete access and limited access. As one example of complete access, [The Journal of Artificial Intelligence Research](#) offers all of its articles to the public for free, supported by [The Artificial Intelligence Access Foundation](#). The advantage to this is that more people will be able to read the articles simply because they are freely available on the internet. However, many journals, perhaps due to a lack of support or due to tradition, require some sort of membership or payment to view its articles. This practice varies. [Astronomy and Astrophysics](#) makes its articles free to view one year after publication (although an author may pay a fee to have the work immediately available). [The American Journal of Physics](#) keeps many of its articles behind a paywall, though some are free to be read by the public. [Some journals](#)

allow a reader to view just one (or any number) of articles for a reduced fee.

Another common trait is making the journal “open source” – that is, the content of the journal is provided by submissions to the journal, as opposed to a staff. These submissions must conform to certain requirements, depending on which journal the article is being submitted to. [Some journals charge for an author to submit an article](#) , [while others do not](#); there appears to be a relationship between whether the journal is free to view and whether the journal charges an author to submit content.

In the age of social media, nearly everything is shared. Many journals, such as [The American Journal of Physics](#) and [Nature](#), make it easier to share their articles. This is generally done by including icons that would allow the reader to share the link to the article in question directly to their Facebook, Twitter, or even to Reddit page. This, in addition to making the articles freely available, extends the reach one article can



<http://www.jneurosci.org/content/39/23?current->

[issue=y](#)

These are the most common modern features of journals. In keeping up with the times, some journals have turned to [Twitter](#), [YouTube](#), and even [Instagram](#). [Nature](#) includes a comment section on each of its articles, allowing readers to directly interact with each other and potentially even the author. [The American Geographical Union collection](#) gives authors an opportunity to write a “[plain language](#)” summary of their article. With a [Social Science Research Network](#) account, the user could save their favorite articles to be read later. In addition to a pop-up abstract, [The Journal of Neuroscience](#) also displays a significance statement for the article, which shows why the article’s findings were important.

**Abstract**

The discovery of a G-protein-coupled receptor for lactate named hydroxybutyrate acid receptor 1 (HCAR1) in neurons has pointed to additional neurobiological effects of lactate in regulating neuronal network activity. In this study, we characterized the intracellular pathways engaged by HCAR1 activation using mouse primary cortical neurons from wild-type (WT) and HCAR1 knock-out (KO) mice from both sexes. Using whole-cell patch clamp, we found that the activation of HCAR1 with 5 mM D-hydroxybutyrate acid (DHB) decreased membrane EPSC frequency, increased paired-pulse ratio, decreased firing frequency, and modulated membrane intrinsic properties. Using fast calcium imaging, we show that HCAR1 agonists D-hydroxybutyrate acid, DHB, and lactate decreased by 40% spontaneous calcium spiking activity of primary cortical neurons from WT but not from HCAR1 KO mice. Notably, in neurons lacking HCAR1, the basal activity was increased compared with WT. HCAR1 modulates its effect in neurons through a  $G_{i/o}$  protein. We observed that the adenylyl cyclase-cAMP-protein kinase A axis is involved in HCAR1 downregulation of neuronal activity. We found that HCAR1 interacts with adenosine A1, GABA<sub>B</sub>, and  $G_{i/o}$  subunits, resulting in a complex modulation of neuronal network activity. We conclude that HCAR1 activation in neurons causes a downregulation of neuronal activity through postsynaptic mechanisms and by reducing neuronal excitability. HCAR1 activation engages both  $G_{i/o}$  and  $G_{q/12}$  intracellular pathways to functionally interact with other G-coupled receptors for the fine tuning of neuronal activity.

**SIGNIFICANCE STATEMENT** Expression of the lactate receptor hydroxybutyrate acid receptor 1 (HCAR1) was recently described in

<http://www.jneurosci.org/content/39/23?current-issue=y>

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So what should you do? Well, that will likely depend on your business model, or how you want to change your business model. If you want your journal to be read more widely, then making your articles (at least a good portion) free to read and shareable will help grow the readership of your journal. Likely, though, this will come at some cost, so you'll have to find a way to make it up – the current trend seems to be through charging writers for content. This may work well with larger journals, like [Nature](https://www.nature.com/), but if your current journal is small and relatively unknown, it may be difficult to convince an author to pay to have their article published. Smaller journals may want to strike a careful balance between these options. Comment sections would allow readers to ask questions and even engage with the author on the topic of the article. Finally, a plain language summary of the article would help readers to understand the article before delving in to perhaps complicated and previously never before seen language.

*Welcome to the first of many blog posts that I will write over the course of my fellowship. In this series, I will be discussing technology, how it's affecting the legal community, and other questions. Please check back each Friday through early August for these posts.*

*Michael Harris is a fellow with the [Access to Justice Program](https://www.access-to-justice.org/) and is working closely with [Legal Services National Technology Assistance Project](https://www.legal-services.org/) and [Northwest Justice](https://www.northwestjustice.org/)*

[Project](#). *Disclaimer: No journals were contacted in this survey. All research has been completed by Michael Harris.*

Last updated on November 16, 2023.

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