



Addgene, An Open Access Success Story

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ABSTRACT

It has been my honor for the last 4 years to facilitate open reagent sharing with the team at Addgene. Addgene accelerates discovery by facilitating collaboration and the open sharing of ready-to-use research materials between scientists all over the world. Since its founding, Addgene has helped thousands of scientists all over the world collaborate to design and carry out their experiments by creating open access to plasmids and their associated data. The Addgenies are proud to facilitate the success of this sharing community.

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FACILITATING OPEN SHARING IN A BIG WAY

Before Addgene was founded in 2004, countless research hours were spent constructing plasmids to be used in a few experiments and then often left to languish until discarded. If a scientist requested a sample to reproduce or extend published data, the plasmid might never be found again or the creator might not have resources to send it (especially if requested from a different country). What a waste of time and resources.

Addgene now ships >500 plasmids each day from our collection of 40,000 samples to scientists in 83 different countries. Some individual plasmids have been distributed over 4,000 times. Over ½ million plasmids have been distributed since the company's founding. That is a lot of cloning time saved and a lot of sharing going on.

The Addgene team is always soliciting new deposits, easing shipping/customs issues and ensuring the utility of the growing collection. Addgene prides itself on its excellent customer service and answers all types of logistical and technical questions. Curation of the data associated with the repository is ongoing and Addgene scientists create protocols, background and informational resources for novices at the bench and long-time cloning experts. The [Addgene Blog](#) "A Better Way to Share Science" gets >25,000 views each month. Scientists are invited to collaborate as guest bloggers, providing an informal forum to feature their work and the reagents they have contributed.

HERE'S WHAT CAN HAPPEN WHEN SCIENTISTS SHARE

Addgene has demonstrated many clear benefits for those who participate in the open sharing community. Depositors save time by not having to fulfill requests and the lab is protected from reagent loss due to the usual turnover of personnel. Perhaps the most tangible career benefit is the increase in visibility the scientists get from depositing in our searchable database. This exposure can lead to collaborations with unexpected partners. Finally, sharing published materials through a biorepository results in increased citations for the depositing authors (Furman 2013).

Recently, Addgene contributed to a very striking example of the positive impact on science of open and easy sharing of standardized reagents. Most of the early leaders in the rapidly expanding field of

CRISPR/cas9 mediated genome engineering were already supporters of Addgene. As noted in a recent review (Hsu 2014), “the rapid adoption of the Cas9 technology was also greatly accelerated through a combination of open-source distributors such as Addgene”.

This simple statement meant a lot to the hardworking Addgenies who have been working overtime to keep up with CRISPR/Cas9 plasmid demand. Because those initial scientists committed to open sharing of their reagents, other scientists got on the bandwagon. Currently, Addgene maintains the most diverse collection of CRISPR/Cas9 reagents available to academic researchers, including >700 plasmids from >50 different labs. Addgene has already distributed over 60,000 CRISPR/Cas9-associated plasmids. The availability of these resources has enabled scientists all over the world to rapidly contribute to this fast-moving field.

IMPACT ON SCIENCE

Addgene’s impact continues to grow. Perhaps the ones who can express it best are the scientists who have benefited from the open sharing model. These are just a few of the many “thank yous” we get each day.

“We have smoothly received the items with kind help from you and the Addgene team. 6 plasmids have been extracted and applied in our research yesterday. We have to say they are really helpful. Thanks again for your excellent work!” –Scientists in China

“The plasmids have arrived - yes!!! It has not been easy, but we did it! Thank you so much!” –A requester from Russia

“They are here!!! Whew. Thank you for the help through the tough import process.” –A Brazilian scientist

“I look forward to a great long term relationship with Addgene team. Your help is of incredible importance to me and my career. You perhaps wouldn’t be able to imagine the magnitude of your help.” –A PI opening a new lab in India

“Once I publish the paper the first thing I plan to do is to deposit my own plasmids. I wish the journals would mandate it ...” –A scientist in the United States

“Thanks for your service. You have already saved me countless hours” –A happy depositor

“I do not what to say, this email made me speechless, it is like a light shed on me in the middle of the darkness that we live in this country...Thank you again, and my faithful thanks to your company and staff for all the facilities they provided. “ –Response to a query from an Addgenie checking to see if the plasmids had finally arrived, from a scientist in Iraq (Addgene was able to ship there briefly in 2014

Addgene is exceptionally grateful to its community of 2,500 generous, depositing Principal Investigators and the large numbers of graduate students, laboratory technicians and postdoctoral fellows that have taken the small amount of effort required to contribute to the repository. We are so proud of this community and its contribution to open science. It is why we do what we do every day.



A Recent Photo of the Addgenies.

REFERENCES

Furman, Jeffrey. "Climbing Atop the Shoulders of Giants: The Impact of Institutions on Cumulative Research." *American Economic Review*, 2013: 1933-1963. <http://dx.doi.org/10.1257/aer.101.5.1933>

Hsu, Patrick. "Development and Applications of CRISPR-Cas9 for Genome Engineering." *Cell*, 2014: 1262-1278. <http://dx.doi.org/10.1016/j.cell.2014.05.010>