

By Ainslie Parsons and Carmela De Luca



The Battle to Control CRISPR IP Continues

The CRISPR/Cas9 system allows specific “editing” of genes in living cells and organisms using in part a cell’s own machinery. This system has already revolutionized genomic engineering and is expected to have profound implications for disease treatment, agriculture and beyond. Not surprisingly, the powerful potential applications of CRISPR have led to a significant amount of interest in protecting the intellectual property associated with this technology.

Currently, a patent battle is ongoing in the United States between the University of California (UC), Berkeley and the Broad Institute in Cambridge, Massachusetts. Briefly, in May 2012, a group of researchers associated with UC Berkeley and Umea University in Sweden filed a patent application in the United States Patent and Trademark Office (USPTO) describing a CRISPR/Cas9 system that could cut DNA in vitro. In December 2012, a second group from the Broad Institute also filed a patent application in the USPTO. Unlike the UC application, which only included data showing the use of CRISPR/Cas9 in prokaryotic cells, the Broad application showed that the CRISPR/Cas9 system could be used in eukaryotic cells to modify DNA in vivo.

While the Broad application was filed after the UC application, it issued to patent first in April 2014 with claims covering methods of editing genes in eukaryotic cells using CRISPR/Cas9. In early 2016, UC Berkeley requested that a patent interference be initiated (these proceedings are now obsolete under the current “first to file” system in the United States), claiming that the UC team invented the CRISPR/Cas9 system and that the disclosure from the Broad Institute that the system worked in eukaryotic cells was merely an obvious extension of the UC team’s work.

In a February 2017 decision, the United States Patent Trial and Appeal Board rejected the University of California’s argument, meaning that the Broad patent remains valid, and the

UC application can proceed. The decision is currently being appealed before the United States Court of Appeals for the Federal Circuit but even if the decision is upheld, it is unknown what patent claims will ultimately issue from the UC family of applications.

More recently, the battle has expanded beyond the United States as a number of CRISPR patents have been granted in Europe. In March of this year, the European Patent Office revoked one of the Broad Institute’s key CRISPR patents for an invalid priority claim. As a result, the issued claims were found to lack novelty over a number of intervening disclosures. The Broad Institute is appealing the decision.

It is far from clear who will ultimately prevail in the CRISPR/Cas9 dispute, and it is possible that victory will be shared. While the current licensing landscape for CRISPR/Cas9 is complex, licensing opportunities do exist. Indeed, the value of CRISPR, coupled with the number of CRISPR-related patents and applications, have led some to suggest that “patent pools”, agreements between two or more patent owners to license their IP together, may be well suited to this technology. In addition, improvements and alternatives to CRISPR/Cas9 are in development. There is no doubt that CRISPR will continue to break new ground, both scientifically and on the intellectual property front.



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