

The CRISPR Journal Publishes Study Validating FAST-HDR Gene Editing Technology

Article Studying SARS-CoV-2 Viral Proteins by ExpressCells Co-Founder Shows Benefits of ExpressCells' Technology

PHILADELPHIA, PENNSYLVANIA, UNITED STATES, January 4, 2022 /EINPresswire.com/ -- [ExpressCells](#), Inc., a biotechnology company that creates genetically edited cell lines for research, drug discovery, and production, announced today that The CRISPR Journal has published the first study that validates the company's FAST-HDR technology. This study, from Temple University, shows the benefits of using FAST-HDR to create genetically modified cell lines. This allowed the researchers to study three different proteins by tagging them with genes that code for fluorescent proteins. This removes burdensome work for detecting the proteins under study and accelerates the researchers' ability to track them via live-cell imaging.

"As a research scientist, I grew frustrated with the long lead times and inflexibility of older methods to detect multiple proteins by microscopy that needed cell fixing and antibodies" said Dr. Oscar Perez Leal, Assistant Professor at the [Temple University School of Pharmacy](#) and co-founder of ExpressCells. "I invented the FAST-HDR

“

I invented the FAST-HDR technology and realized it would benefit other scientists...that is why we established ExpressCells."

Oscar Perez Leal, M.D.

technology and realized it would benefit other scientists interested in confocal microscopy without using antibodies or chemical staining. That is why we established ExpressCells."

[The publication](#), "Multiplex Gene Tagging with CRISPR-Cas9 for Live-Cell Microscopy and Application to Study the Role of SARS-CoV-2 Proteins in Autophagy, Mitochondrial Dynamics, and Cell Growth," outlines how the FAST-HDR



Cells edited using FAST-HDR, as shown on the CRISPR Journal 12/2021 cover

vector system, used in combination with CRISPR-Cas9, allows visual live-cell studies of up to three endogenous proteins within the same cell line. The researchers developed gene-edited cellular models that allowed them to study physiological processes such as autophagy and mitochondrial dynamics in live cells. With these cells, they studied the role of multiple proteins from the virus that causes the COVID-19 disease and were able to identify the protein ORF3a as a potent inhibitor of autophagy, inducer of mitochondrial relocation, and a growth inhibitor.

Dr Perez added “the FAST-HDR system leverages the cell’s own repair mechanism to insert DNA-encoded labeling tags into specific genes of the cell’s genome. This allows the creation of cell lines with precise labeling of cellular structures and drug targets much faster than previous methodologies”

About ExpressCells

ExpressCells uses its patented FAST-HDR system to create advanced, genetically-edited cell lines that enhance drug discovery, analytical testing, and other types of biological research. This includes knock-ins, knock-outs, and point mutations. The speed of the process allows ExpressCells to insert one to three genes into the same cell line months faster than other technologies. ExpressCells sells both custom and catalog cell lines. For more information, visit [xpresscells.com](https://www.xpresscells.com).

Matthew Handel
ExpressCells
+1 484-483-6759
[email us here](#)



Oscar Perez Leal, M.D., inventor of FAST-HDR



EIN Presswire's priority is source transparency. We do not allow opaque clients, and our editors try to be careful about weeding out false and misleading content. As a user, if you see something we have missed, please do bring it to our attention. Your help is welcome. EIN Presswire, Everyone's Internet News Presswire™, tries to define some of the boundaries that are reasonable in today's world. Please see our Editorial Guidelines for more information.

© 1995-2022 IPD Group, Inc. All Right Reserved.