



SciLifeLab  
industry users:  
>100 yearly

## SciLifeLab user case: **Industry**

Biotech

# Collaborative development of a kit for same-day analysis of gene editing efficiency

The SciLifeLab CRISPR Functional Genomics (CFG) unit played an essential role in aiding the development of GeneAbacus, a ready-to-use gene editing analysis kit launched by the start-up company Countagen. The kit aims to reduce the time and resources needed to analyse gene editing efficiency and specificity.



*We are addressing researchers who regularly use CRISPR to modify genes in cultured cells or model organisms to study basic cell biological processes or develop new therapies”, says Felix Neumann, CEO and co-founder of Countagen.*

The kit aims to decrease the time required to analyze how well a CRISPR manipulation has performed, for example, by quantifying the percentage of cells in a gene-edited cell population that have the desired gene edit, within a single day and without the need for expensive instruments or reagents.

Researchers often use multistep workflows for the analysis of pools and subsequent clonal selection, now they can use just one workflow – saving time and material costs. SciLifeLab acted as a testbed for Countagen’s kit and examined whether the product works as claimed and is user-friendly. It’s crucial that someone not involved in the development can easily use it.



Curious to learn more? Access full case text through the QR code!



## SciLifeLab infrastructure related to the case

CFG performs pooled, massively parallel gene perturbation using several CRISPR modalities in cell lines. Pooled genetic loss- or gain-of-function screens enable interrogation of thousands to tens of thousands of genes for involvement in a biological process of interest. Every year, CFG conducts around 10 large scale genetic screens, and creates around 30 precision-edited cell lines (knock-outs, mutations, knock-ins) as model systems for basic research.

CFG provides access to verified, genome-wide lentiviral CRISPR guide libraries, and can create any custom guide library for targeted loss- and gain of function studies (CRISPR knock-out, CRISPR inhibition, CRISPR activation). CFG can handle the entire process from library creation and lentiviral packaging, via cell transduction and phenotypic selection, to next generation sequencing and data analysis.



*"We make these kinds of gene edits all the time, so we have a lot of material to enable Countagen to test their product. To benchmark Countagen's kit against one of the current gold-standard methods, we use our digital droplet PCR (ddPCR) system", says Bernhard Schmierer, head of the SciLifeLab CFG unit.*

### SciLifeLab CRISPR Functional Genomics

CFG's expertise is not limited to genetic screening, however. Since 2019, the unit has also been creating precision edited cell lines by applying CRISPR-based knock-out, knock-in, as well as base-editing and prime-editing, creating valuable cellular model systems for researchers. As part of the Chemical Biology and Genome Engineering platform, we have a special interest in CRISPR approaches for drug target identification and mechanism-of-action elucidation, and CFG is developing base-editing approaches for targeted mutagenesis screens to characterize protein-drug or protein-protein interactions.

Potential users are welcome to contact the unit to schedule a free consultation meeting.

### Get in touch!

[scilifelab.se/units/crispr-functional-genomics/](https://scilifelab.se/units/crispr-functional-genomics/)

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