

# Amgen on AbD and CLD

## MEET YOUR PEER

Philip Tagari is currently Vice President of Research (Therapeutic Discovery) at Amgen Inc, the world's largest independent biotechnology company. His global teams have advanced over 30 innovative molecules into clinical development in recent years, including AMG 510 (first-in-class KRASG12C inhibitor) and AMG701 (half-life extended bispecific T-cell engager). Additionally, he is an active member of Amgen Ventures and has participated in numerous research collaborations as well as the integration of Immunex, Tularik, Abgenix, Micromet, and Nuevolution into the Amgen laboratories.



## TRANSFORMATIVE TECHNOLOGY

As one of the early customers to have adopted the Berkeley Lights platform, Mr. Tagari and his colleagues at Amgen have been able to continuously push the capabilities of the Beacon® optofluidic system. Since adoption, Amgen has expanded their usage of the platform from antibody discovery to cell line development. Mr. Tagari describes the Berkeley Lights technology in Amgen's [online feature](#) "We've actually put this technology into practice in our antibody discovery work, and it takes about four months off the normal timeline. It's also our standard method for cell line development, and we're looking to extend our success in these areas to other applications. It's starting to feel like a pretty transformative tool!"

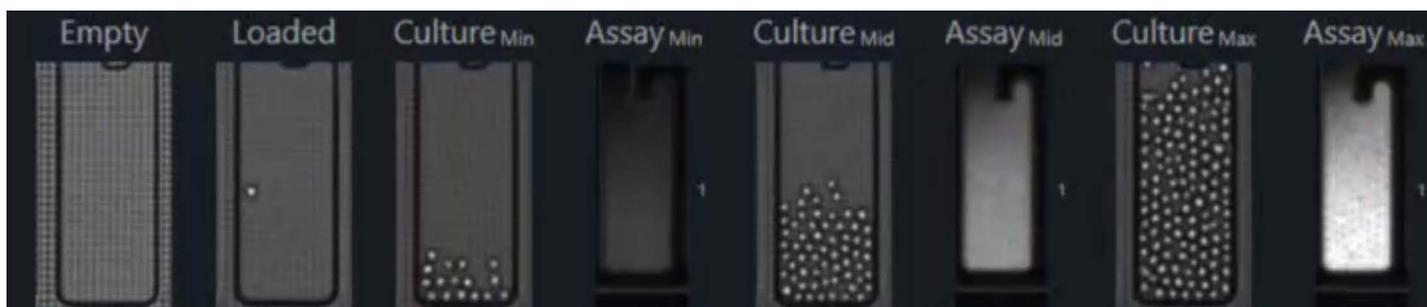
## >99% MONOCLONALITY ASSURANCE

The Amgen team was also first to publish a paper on [monoclonality of cell lines derived from the Opto™ CLD workflows on the Beacon system](#), sharing with the rest of the scientific community their strategy to validate

that clones can be generated with >99% monoclonality assurance, higher overall cloning efficiency than using other well-known methods, and offering what they described as a "superior clonality data package<sup>2</sup>".

“ In the long run, this technology will help us to solve complex problems that are too hard or expensive to solve with our current tools. ”

— Philip Tagari  
Vice President of Therapeutic Discovery, Amgen



Visual record of a clone through multiple days of culture in a NanoPen™ chamber on an OptoSelect™ chip.

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## GREATER B CELL DIVERSITY

One of the key advantages of the Beacon system is the ability to screen B cells from multiple organs (spleen, bone marrow, lymph nodes) and culture them for multiple days in specialized media to enable multiple screens from a single cell sample. As noted by Amgen's scientists, using previous method of hybridoma fusion for antibody discovery starts

out with 0.1% of B cells surviving the fusion, not to mention the weeks it takes to grow the millions of cells for screening. With the Beacon system you can skip the entire hybridoma model, getting to your answers faster and with more relevant data. You can directly assay the B cells and connect antibody function to gene sequence at the single-cell level.

### TYPICAL HYBRIDOMA WORKFLOW



### BERKELEY LIGHTS OPTO PLASMA B DISCOVERY WORKFLOW



## REFERENCES

<sup>1</sup> *The Digital Cell Biology Revolution*, Amgen® Science, accessed 20 August 2020 <<https://www.amgenscience.com/features/the-digital-cell-biology-revolution/>>

<sup>2</sup> Le, K et al. (2019) *Biotechnology Journal*.

FOR MORE INFORMATION, VISIT  
[berkeleylights.com/workflows/antibody-discovery/](https://berkeleylights.com/workflows/antibody-discovery/)

[berkeleylights.com/workflows/cell-line-development/](https://berkeleylights.com/workflows/cell-line-development/)

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