



<b>Session 8</b>	<b>Microbial protein transition players</b>
Pitch Title	Pop-Out-Plasmid technology enables protein production without antibiotics or costly inducers
Company	Gearbox Biosciences
Speaker	Arvi Joers
Keywords feedstock	glucose
Keywords technology	E. coli, antibiotic-free, protein production
Keywords End-Product	recombinant protein

**Abstract:**

Gearbox Biosciences has developed a novel technology for protein expression in E. coli with following properties:

- \* Completely antibiotic-free - less regulatory concern, easier waste management
- \* Growth-decoupled production - higher yield
- \* No need for IPTG - better unit economics

The technology we use is unique and is based on a new molecular biology approach where we combine stable genomic integration with multicopy plasmids to achieve high protein expression levels without any selection. We also have an inducible expression without any inducers (IPTG or other). Find out more about our technology here:

<https://www.youtube.com/watch?v=Q4BFAOBdC5s>

Our customers are companies who produce proteins for various applications (pharma, food etc) and want to eliminate all risks associated with the use of antibiotics (regulatory, environmental and ethical). There are hundreds of different proteins produced in E. coli globally on an industrial scale and most of them could use our Pop-Out-Plasmid technology to avoid antibiotics and improve unit economics.

Our business model is licensing and we have several paying clients. We raised our pre-seed round in Q3 2023 and are looking forward to raising the seed round in Q2 2025.