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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
National Institutes of Health
Larta Institute
National Institutes of Health Commercialization Assistance Program (NIH-CAP)

Company Profile

Industry Sector:
Biotechnology, Pharmaceuticals

Company Overview:
Glycobia, Inc. is developing a proprietary manufacturing platform for a class of human drugs called glycoproteins. Glycoproteins are proteins linked to complex sugars (glycans), and glycoprotein drugs have a $50B worldwide market. Glycobia will use genetically engineered bacteria to synthesize safe, affordable therapeutic glycoproteins for biopharma clients.

Target Market(s):
Glycobia technology addresses three biopharmaceutical markets: biosimilars, biobetters, and novel drugs. By engineering glycans that are identical to those found on existing drugs, we can create biosimilars. By engineering glycans that optimize existing drugs, we can create biobetters. By engineering entirely novel glycan compositions, we can potentially create our own novel drug candidates in-house.

Key Value Drivers

Technology:
Glycobia is engineering the bacterium *Escherichia coli* to manufacture human glycoproteins by inserting genes for appropriate sets of human glycosyltransferases. *E. coli* does not have any native protein glycosylation pathways, so we can design strains that faithfully replicate existing glycoproteins or create novel glycoproteins with improved solubility and immune system compatibility.

Competitive Advantage:
Unlike many existing and emerging platforms for glycoprotein expression, *E. coli* grows quickly in affordable media, is resistant to human viruses, and has a long history of FDA approval.

Plan & Strategy:
Glycobia's immediate goal is proof-of-concept synthesis of a human therapeutic glycoprotein using our platform technology. While our technology will allow us to manufacture numerous human drugs, we expect our key value will be realized through licensing or selling our intellectual property to a large biotech or pharma company.

Leadership

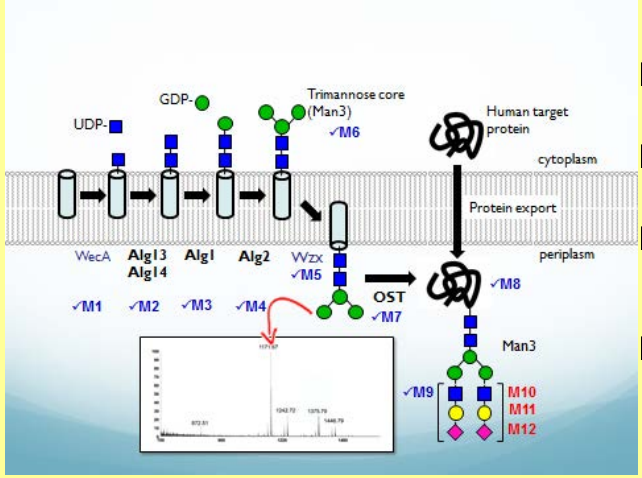
Dr. Matthew P. DeLisa – Founder
Assoc. Prof. of Chemical & Biomolecular Engineering, Cornell University
MIT Technology Review TR35: Top 35 Innovators Under the Age of 35

Dr. Adam C. Fisher – Founder
Ph.D. in Chemical & Biomolecular Engineering, Cornell University
Austin O. Hooey Award for Research Excellence

Chang B. Hong, Esq. – Founder
Intellectual Property Attorney

GlycoFi	($400M acquisition)
Joule Unlimited	($30M Series B)
Glycobia	(exclusive license for glycosylation technology from Cornell University)

Product Pipeline



- ☑ **Eukaryotic glycoproteins**
- ☐ **Humanized glycoproteins**
- ☑ **Custom glycoprotein #1 (proprietary)**
- ☐ **Custom glycoprotein #2 (proprietary)**