ComAb

An Antibody-Based
Complement Inhibitor Platform

ComAb: Executive Summary

Problems :
- Dysfunctional complement cascade -> excessive Membrane Attack Complex (MAC) formation destroying specific cell types -> pathophysiology of numerous diseases

Solution:
- Therapeutic agents that block the complement cascade to stop destruction of cells

US and Global Market Size:
- US$15-20B (based on anti-C5, Eculizumab's $5B x4)

Preclinical Data:
- Most advanced asset, anti-C6 mAb significantly reduced red blood cell destruction in a preclinical model of autoimmune hemolytic anemia, the primary indication

CCF Patents:
- Provisional patent filed, additional fillings to follow

CCF Inventor:
- Dr. Feng Lin, Inflammation & Immunity, LRI, CCF, a world leader in the complement biology field

Complement System Market Opportunity

- The complement system comprises a group of over 50 proteins that augment immune responses
- Complement is implicated in a range of diseases and has become a target for new therapeutics.
- C5-blocking monoclonal antibody (mAb) eculizumab was the first anti-complement therapy – originally approved in 2007 for treatment of ultra-rare disease Paroxysmal Nocturnal Hemoglobinuria
- Eculizumab (Soliris) inhibits MAC (membrane attack complex) formation through targeting C5
- Approved to treat four diseases:
  - Myasthenia gravis (MG)
  - Paroxysmal nocturnal hemoglobinuria (PNH)
  - Atypical hemolytic uremic syndrome (aHUS)
  - Neuromyelitis optica spectrum disorders (NOSD)
- Many opportunities remain…

Anti-C5 mAbs

Alexion – acquired by AstraZeneca for $39 bn

Anti-C1s mAb

Sanofi

C5aR inhibitor

ChemoCentryx-- acquired by Amgen for $4 bn

C3 inhibitor

Apellis --- NDA filed and accepted. Market cap $6.4 bn

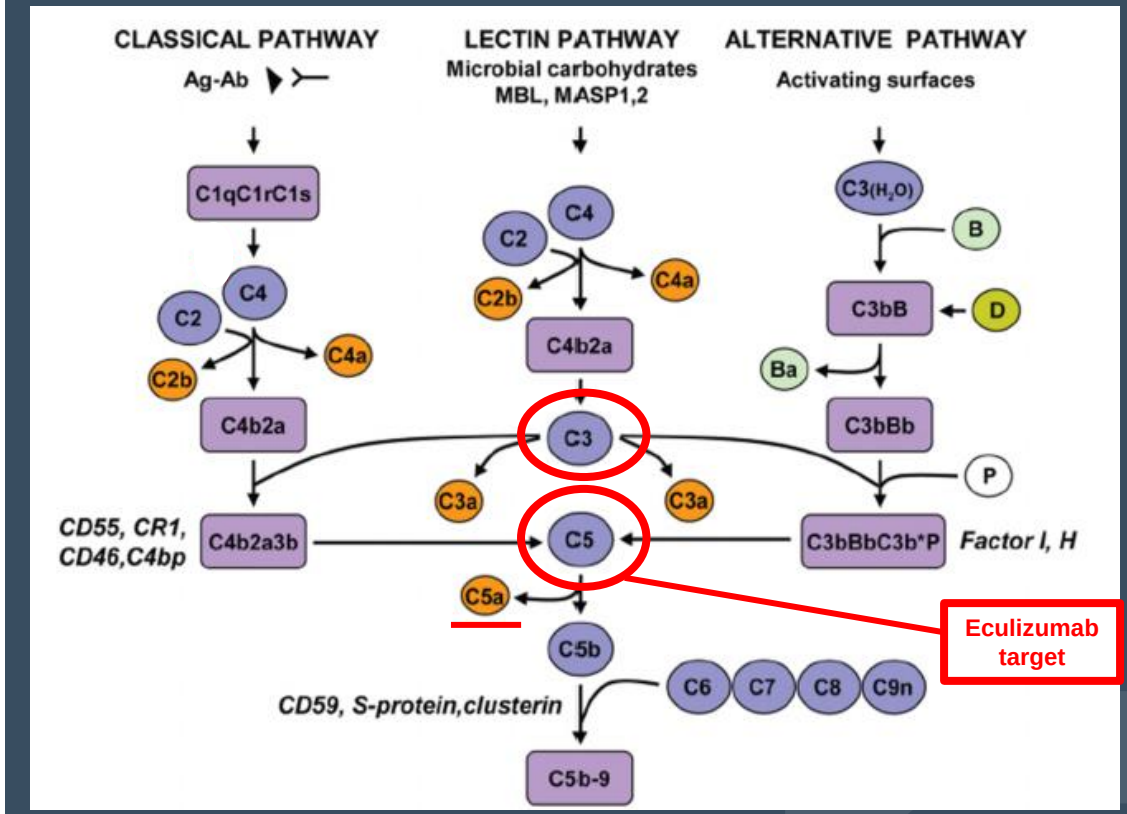
C5 inhibitor

IVERIC bio– acquired by Astellas for $6 bn

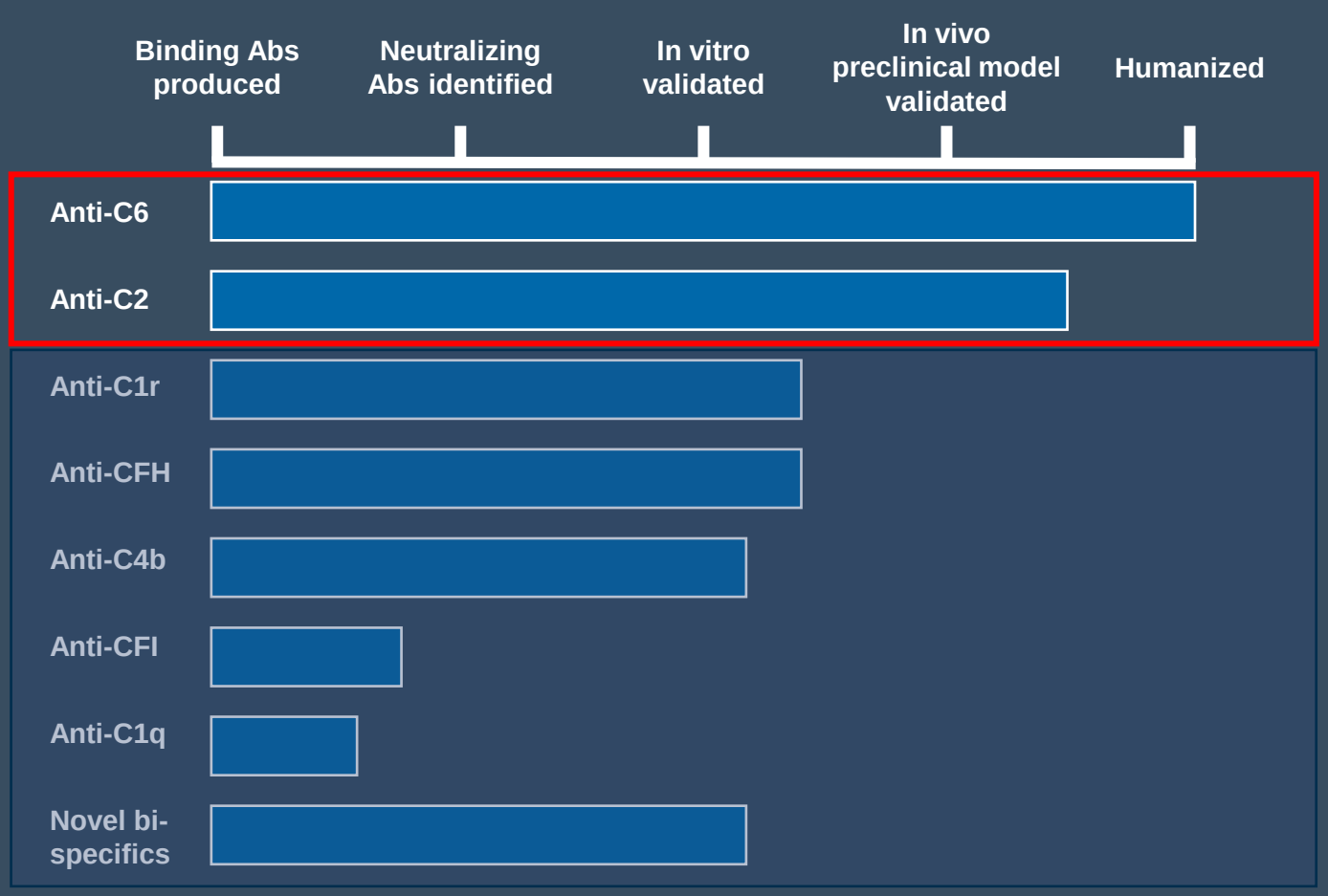
ComAb Complement Pipeline in Development

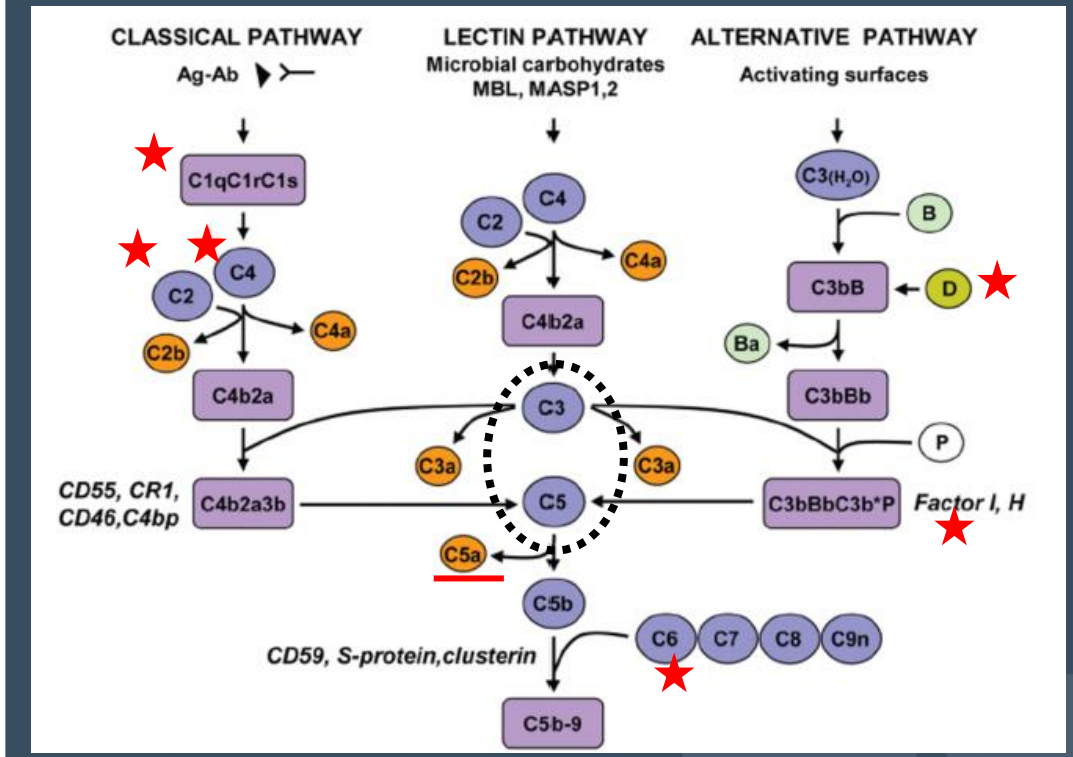
Problems:

- Eculizumab lacks specificity and inhibits the formation of C5a besides inhibiting the formation of MAC
  - The membrane attack complex (MAC) is a complex of proteins formed through activation of the complement system
- C5a is critical for anti-infections
- Risk of opportunistic infections such as meningitis
- Difficult target due to high concentration and turnover
- High effective dosage (~1g)
  - 5g for the first 5 weeks, and then every 2 weeks for 26 weeks.
- High drug costs
  - At $500K per patient/year, eculizumab is one of the most expensive therapies in the world



ComAb Complement Pipeline in Development



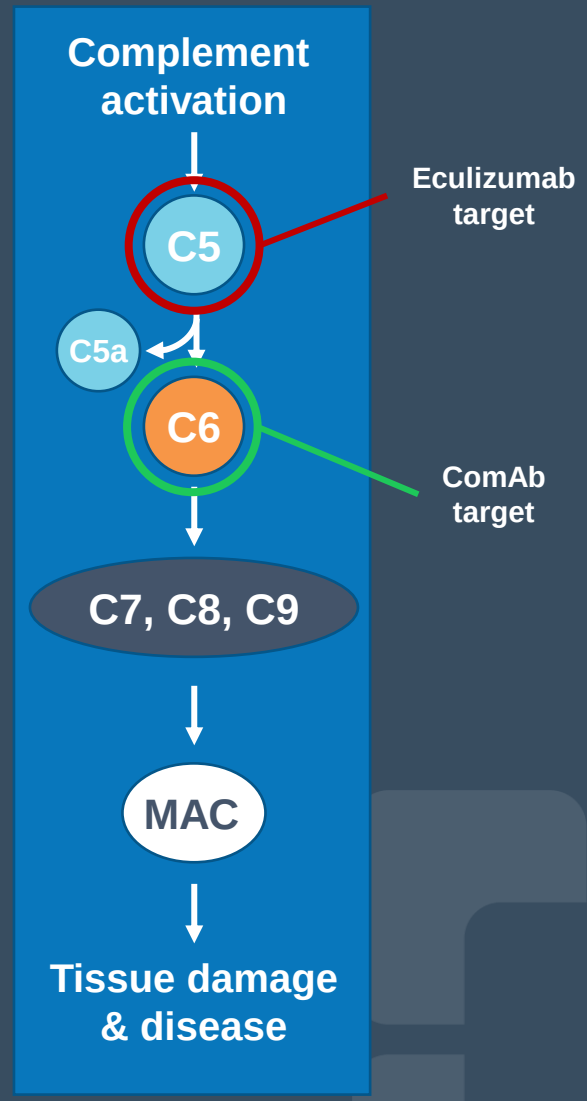


Potential Target Indications: Age-related macular degeneration, antibody-mediated transplantation rejection, myasthenia gravis, ischemia/reperfusion injury, paroxysmal nocturnal hemoglobinuria, atypical hemolytic uremic syndrome, neuromyelitis optica spectrum disorders, dense-deposit disease, membrane-proliferative glomerulonephritis, autoimmune hemolytic anemia, catastrophic antiphospholipid syndrome, Gullain Barre Syndrome, sickle cell disease, and others…

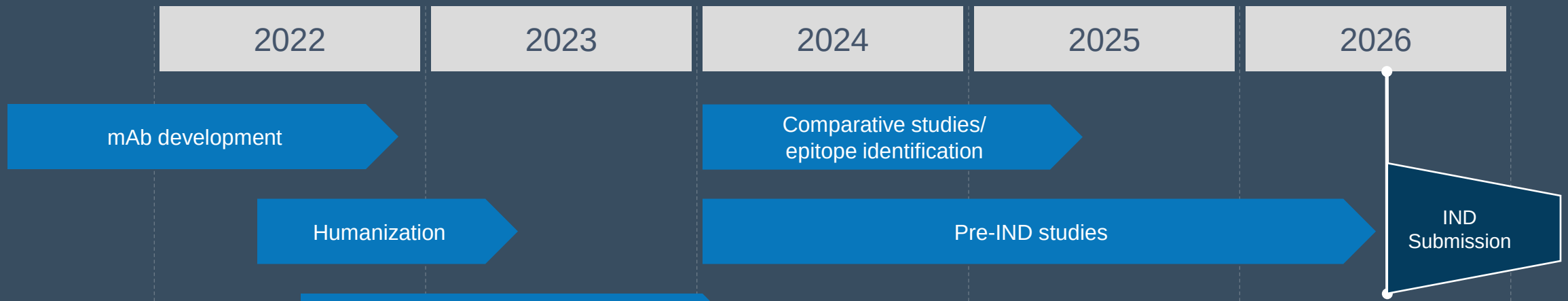
Lead Program: Anti-C6

Opportunity:

- ComAb humanized anti-C6 mAb selectively inhibits MAC formation downstream without impacting C5a production
- Demonstrated inhibited hemolysis in a preclinical model of autoimmune hemolytic anemia, lead indication
- Humanized by LifeArc (former MRC Technology, UK), a world-expert of antibody humanization and engineering, who humanized KEYTRUDA
- Intellectual property filed protecting composition
- Lead program in platform opportunity



C6 Development Timeline & Funding Need



Capital Need: ~$6M for pre-IND studies

Team

Feng Lin, PhD
Professor, Tuohy/November Endowed Chair, Cleveland Clinic. Trained complementologist and leader in the field. PI of multiple related grants from the NIH, Foundations and Industry; Consultant for the complement industry.

Jin Chen, PhD
PhD in complement biology. Postdoc for four years in the Lin lab on multiple complement-related projects