

# **WHY WE SOLD OUR APELLIS PHARMACEUTICALS (APLS) SHARES**

**RECENTLY PUBLISHED ABSTRACT ON LATE STAGE ORAL  
DRUG FROM NOVARTIS EVISCERATED OUR APELLIS LONG  
THESIS**

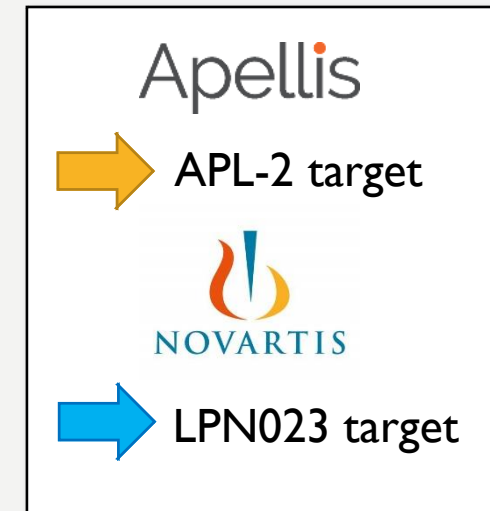
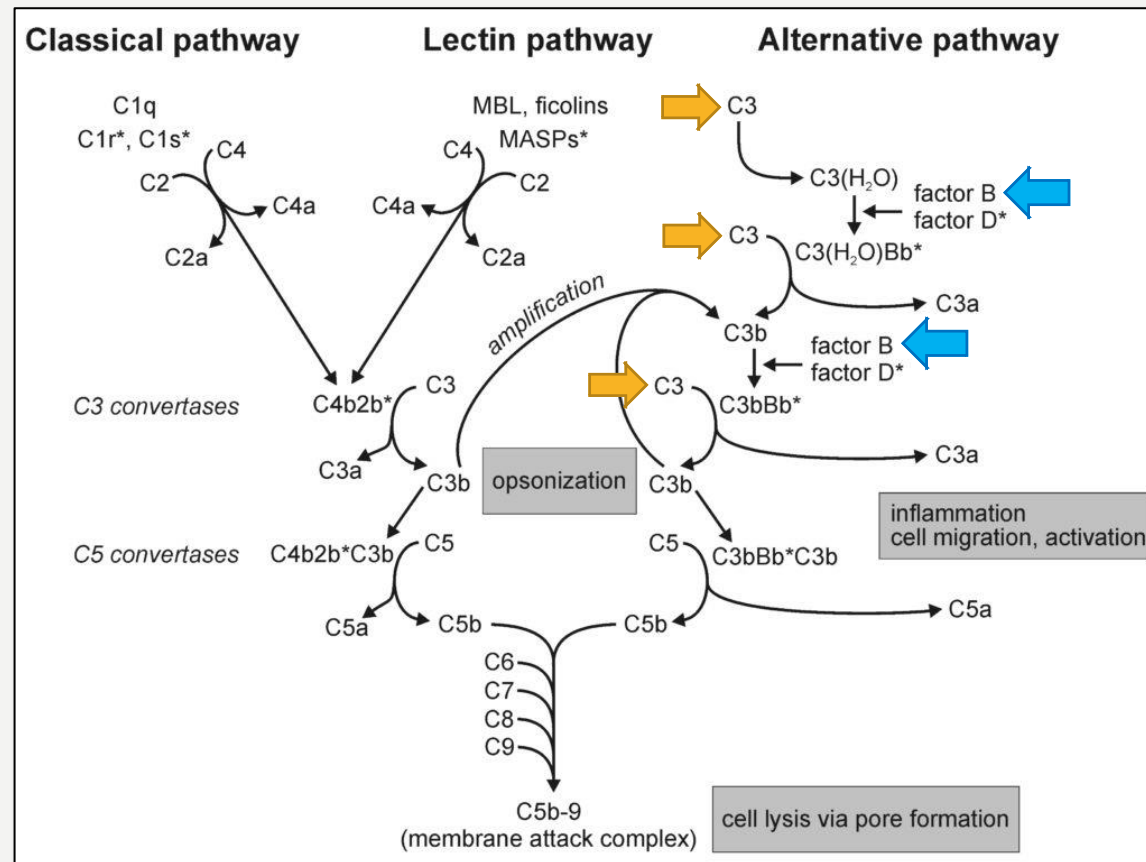
# INTRODUCTION

- [Apellis Pharmaceuticals](#)' APL-2 inhibits Complement factor C3.
- [APL-2](#) successfully completed a pivotal study in paroxysmal nocturnal hemoglobinuria (PNH) called PEGASUS.
  - PNH patients typically get good results with Alexion's C5 inhibitors (Soliris and Ultomiris), but a small percentage do not.
  - PEGASUS studied APL-2 in those patients.
- We **were** long APLS shares because we thought they had good clinical data in the subset of PNH patients mentioned above.

We now believe the late stage clinical data that Novartis just previewed in an abstract for the upcoming EBMT conference renders Apellis' lead program dead on arrival commercially.

# BACKGROUND

- Both Apellis' APL-2 and Novartis' LPN023 target the complement system. Though APL-2 targets C3 and LPN023 targets Factor B, **both are effective alternative pathway inhibitors:**



# HEAD TO HEAD COMPARISON

Apellis

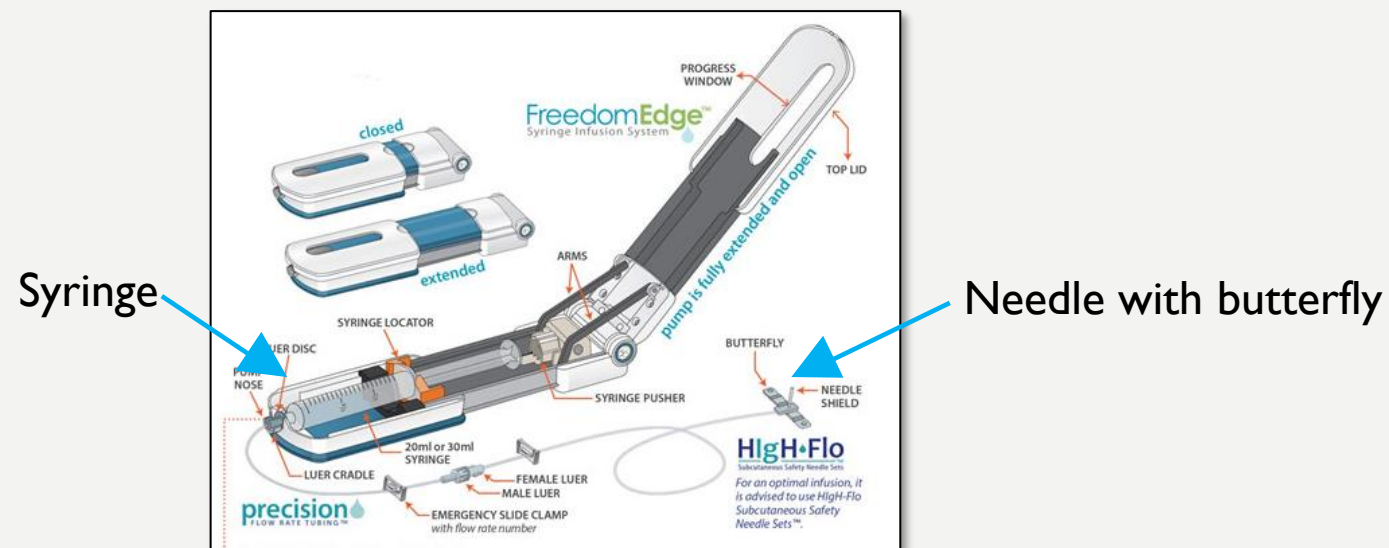


In patients with PNH who respond poorly to C5 inhibitors...	APL-2	LNP023
Blocks intravascular hemolysis (IVH)	✓	✓
Blocks extravascular hemolysis (EVH)	✓	✓
Increases lactate dehydrogenase (LDH)	✓	✓
Increases hemoglobin (Hb)	✓	✓
Safe and well tolerated	✓	✓
Easily administered	XXXX	✓✓✓

**Novartis' LNP023 is an ORAL DRUG while Apellis' APL-2 is a twice weekly infusion that can take an hour.**

# NOT YOUR ORDINARY 'SUBCUTANEOUS DELIVERY'

- Very little has been publicly disclosed about Apellis' APL-2 delivery but here is what we believe to be true:
  - The drug is delivered via a twice-weekly infusion that can take as long as an hour.
  - The device we believe is used to administer APL-2 does not look like fun to us:



# SUMMARY

- [Novartis' previewed very exciting data](#) for their LNP023 in patients with PNH who respond poorly to Alexion's C5 inhibitors.
  - Novartis management is **very excited about this drug** and **rapidly progressing it** to the market (Q2:20 earnings call):

Now moving to Slide 11. Some of the emerging pipeline assets that we've discussed in our recent R&D date continue to progress as well. And I think many of these assets are underappreciated. LNP023, our Factor B inhibitor, is being developed in a range of renal diseases as well as PNH. The single PNH pivotal trial will -- we expect to start in 2020 as well as the full range of renal studies as well in 2021.

- Additional clinical data will on the Novartis' oral LNP023 will be presented [at next month's EBMT conference](#). We expect it to be incrementally positive.
- All other things being equal, **we think 100% of patients will prefer Novartis' oral drug** over Apellis' twice weekly (clunky) infusion.
- We think the Apellis drug, although effective, is dead on arrival commercially.

**We believe that APLS shares are highly overvalued at current prices given competitive pressures from Novartis. We no longer own APLS.**

# LNPO23 ABSTRACT HIGHLIGHTS

**Results:** N=10 (3/7 female/male) PNH patients (25-79 years) with active hemolysis were enrolled and received LNPO23 twice daily (BID) concomitant to eculizumab for at least 13 weeks. LNPO23 was well tolerated; no treatment discontinuation, no treatment-related serious adverse event (SAE) nor thromboembolic events have been reported. All patients required RBC transfusions prior to LNPO23 therapy. At baseline (prior to LNPO23 treatment) mean values for LDH (539 U/L), reticulocytes ( $199 \times 10^9/L$ ), bilirubin (39.2  $\mu\text{mol/L}$ ), free hemoglobin (28.7 g/L) were increased, while values for Hb (97.7 g/L), RBC ( $2.7 \times 10^{12}/L$ ), and haptoglobin ( $< 0.2 \text{ g/L}$ ) were decreased. At week 13, LNPO23 demonstrated meaningful improvement of LDH in all patients with a reduction of 34-81%, and transfusion-free Hb normalization in all (100%) female subjects and 71% males achieved Hb  $> 120 \text{ g/L}$  (mean Hb change from baseline 31.9 g/L; 90% CI 23.4-40.3), and normalization of all biomarkers of hemolytic disease activity (Figure 1). The remarkable effect on both IVH and EVH was confirmed by disappearance of C3 deposition on, and increased size of the PNH RBC population ( $48.4 \pm 32.3$  vs.  $92.5 \pm 34.9$  %RBC at BL vs. Week 13), confirming the prolonged survival of affected RBC. All patients entered into the LNPO23 extension treatment; with a mean LNPO23 exposure of 241 (92-392) days, no patient required RBC transfusion. At the time of the data lock point, 5 patients have already discontinued eculizumab treatment: even on LNPO23 monotherapy, all of them retained their hemoglobin levels, with no change in any biomarker of disease activity and no sign/symptom of breakthrough hemolysis.

**Figure 1 – Time-course of PNH relevant laboratory parameters (LDH, C3d opsonization and Hb)**

