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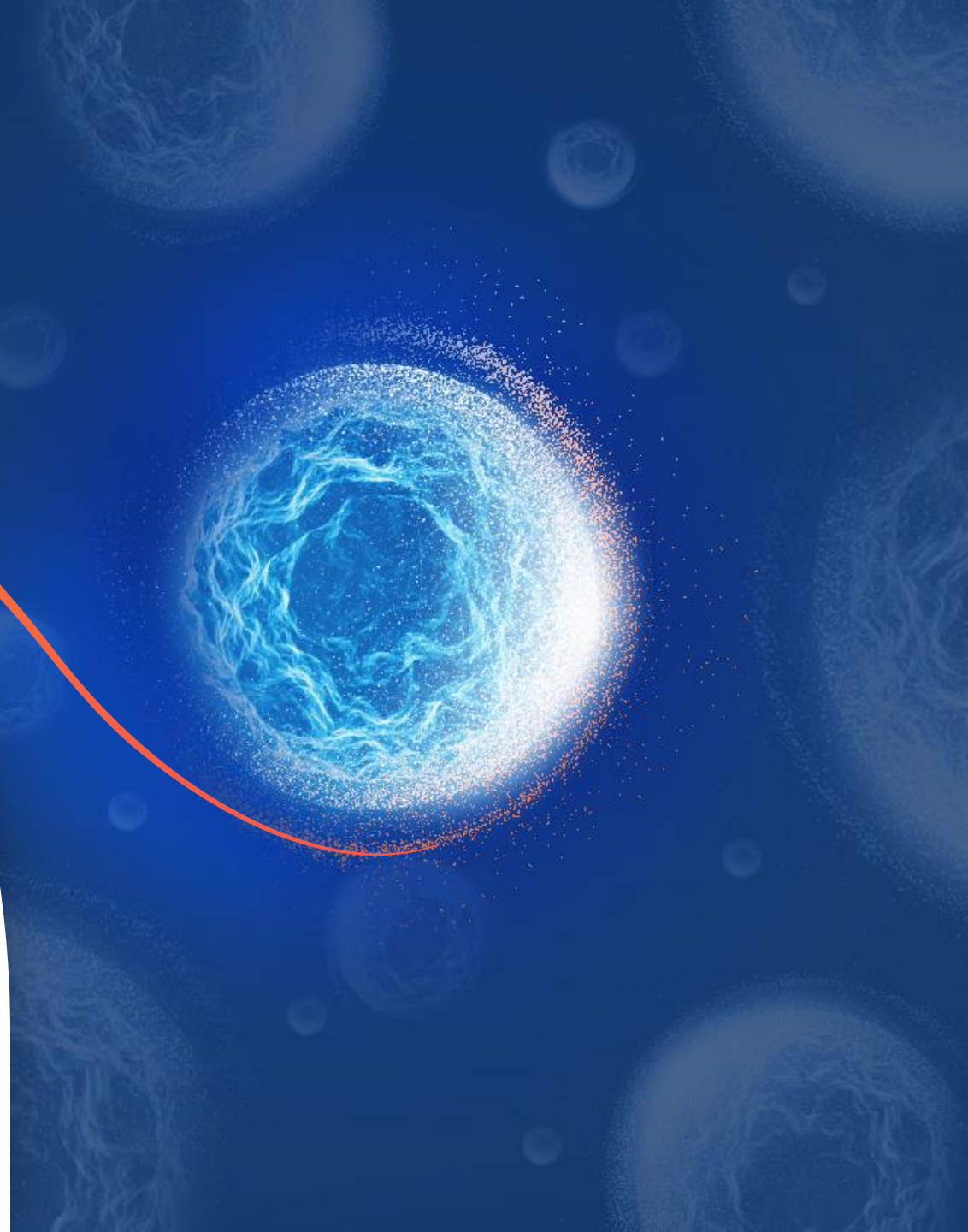
NASDAQ: PYPD

SHIELD II Topline Results

June 9, 2025



Cautionary Note Regarding Forward Looking Statements

This presentation of PolyPid Ltd. (the "Company") contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act and other securities laws. Words such as "expects," "anticipates," "intends," "plans," "believes," "seeks," "estimates" and similar expressions or variations of such words are intended to identify forward-looking statements. For example, the Company is using forward-looking statements when it discusses the safety, efficacy and benefits of D-PLEX$_{100}$, the expected submissions of an New Drug Application, or NDA, to the U.S. Food and Drug Administration, or FDA, and a Marketing Authorization Application, or MAA, and the timing thereof. Forward-looking statements are not historical facts, and are based upon management's current expectations, beliefs and projections, many of which, by their nature, are inherently uncertain. Such expectations, beliefs and projections are expressed in good faith. However, there can be no assurance that management's expectations, beliefs and projections will be achieved and actual results may differ materially from what is expressed in or indicated by the forward-looking statements. Forward-looking statements are subject to risks and uncertainties that could cause actual performance or results to differ materially from those expressed in the forward-looking statements. For a more detailed description of the risks and uncertainties affecting the Company, reference is made to the Company's reports filed from time to time with the Securities and Exchange Commission ("SEC"), including, but not limited to, the risks detailed in the Company's Annual Report on Form 20-F, filed with the SEC on February 26, 2025. Forward-looking statements speak only as of the date the statements are made. The Company assumes no obligation to update forward-looking statements to reflect actual results, subsequent events or circumstances, changes in assumptions or changes in other factors affecting forward-looking information except to the extent required by applicable securities laws. If the Company does update one or more forward-looking statements, no inference should be drawn that the Company will make additional updates with respect thereto or with respect to other forward-looking statements.

SHIELD II

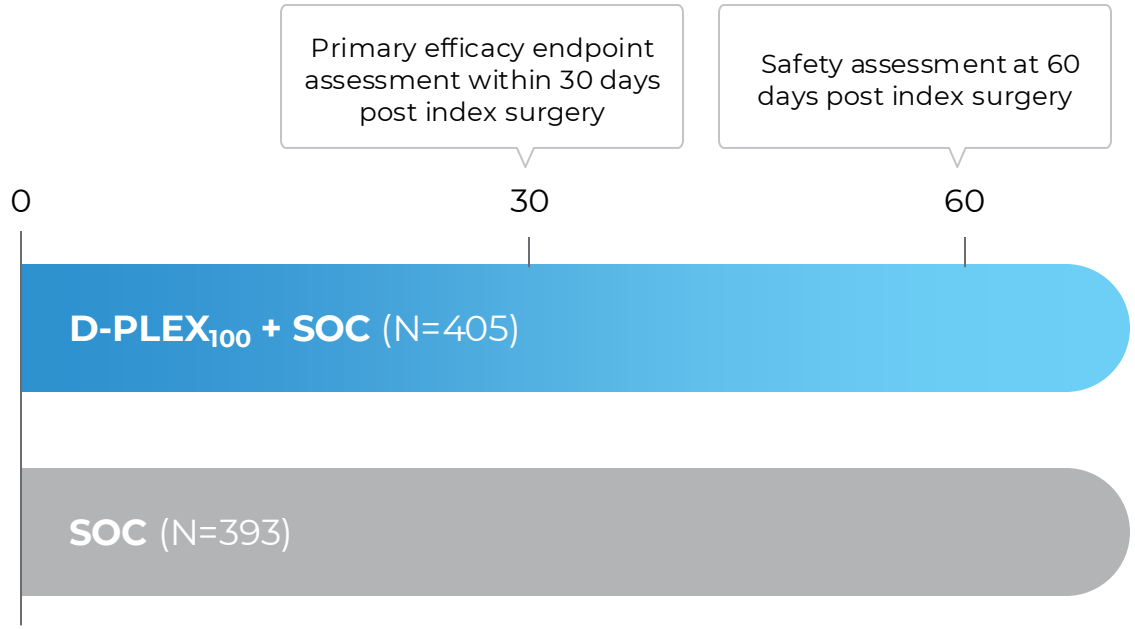
SSI PREVENTION WITH D-PLEX$_{100}$

Scope

- Assess the efficacy and safety of D-PLEX$_{100}$ in the prevention of post abdominal surgery incisional infection
- Prospective, multinational, randomized, controlled, two-arm, double-blind study
- Global trial, ~60 sites in US, Europe, and Israel

Patient Population

- Patients undergoing elective abdominal colorectal surgery with incision length > 20 cm
- ITT cohort: 798 patients
- Randomization 1:1



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Standard of Care (SoC)

- IV antibiotic only / IV antibiotic with mechanical bowel prep / IV antibiotic with oral antibiotics combined with mechanical bowel
- 1st , 2nd or 3rd generation cephalosporin family plus metronidazole given within **60 minutes prior to surgery** and **discontinued at a maximum of 24-hour post** index surgery
- Each site used the same pre-defined SoC for all its subjects during the study

SHIELD II Demographics & Surgery Characteristics (ITT Cohort)

Parameter	D-PLEX$_{100}$ (N=405)	SoC (N=393)
Age (yrs)	67.0	68.0
Female (%)	44.0%	37.9%
BMI (Kg/m^2)	26.2	26.4
Charlson co-morbidity index	4.0	5.0
Surgery duration (hrs)	2.4	2.3
Indication for index surgery (%)		
Cancer	86.2%	91.1%
Inflammatory Bowel Disease (IBD)	2.0%	0.3%
Other	11.9%	8.7%
Preoperative IV antibiotics given prior to index surgery (%)	100%	99.5%

Primary **Efficacy** Endpoint

The Primary Efficacy Endpoint is the combination of the following events measured for 30 days from index surgery:

1. **Surgical Site Infections (SSI)**, deep & superficial, as approved by adjudication committee

2. **All-cause mortality**

3. **Reintervention**
   Re-opening through the same target surgical incision, used for the original index surgery, in the operation room

D-PLEX$_{100}$ Showed Statistically Significant Reduction in the Primary Efficacy Endpoint

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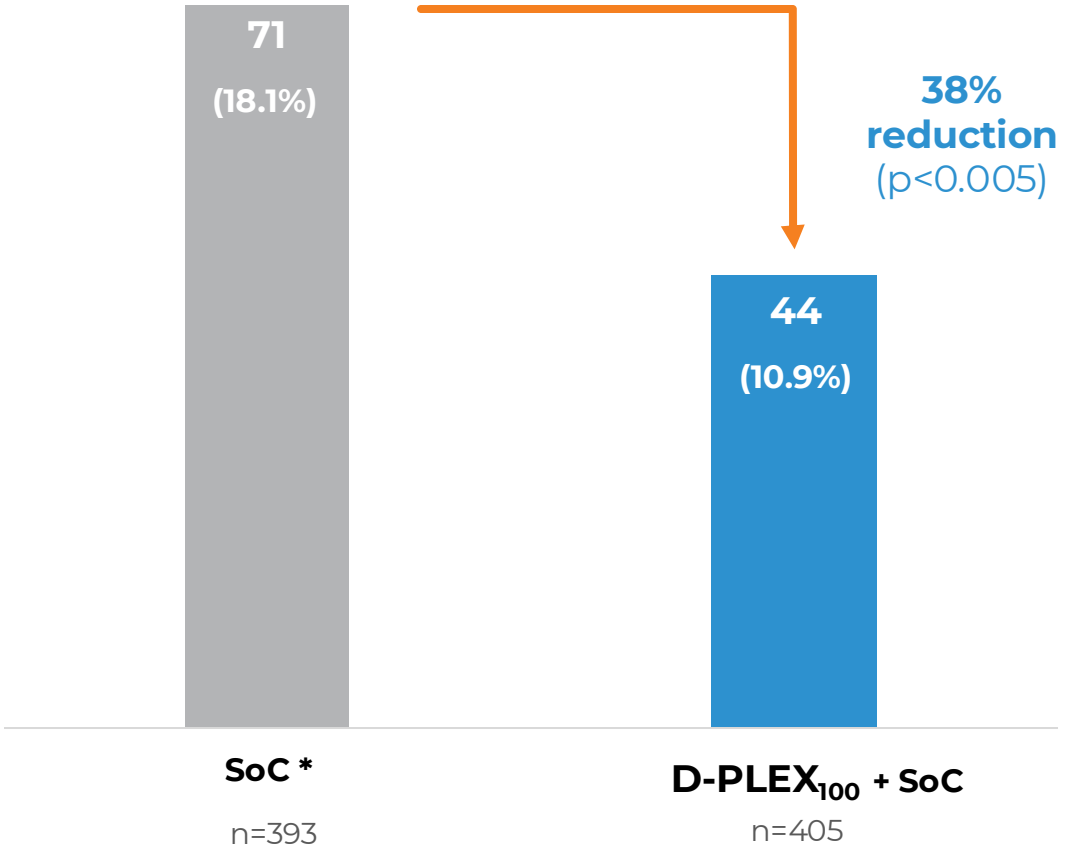
Primary Efficacy Endpoint

(ITT cohort)

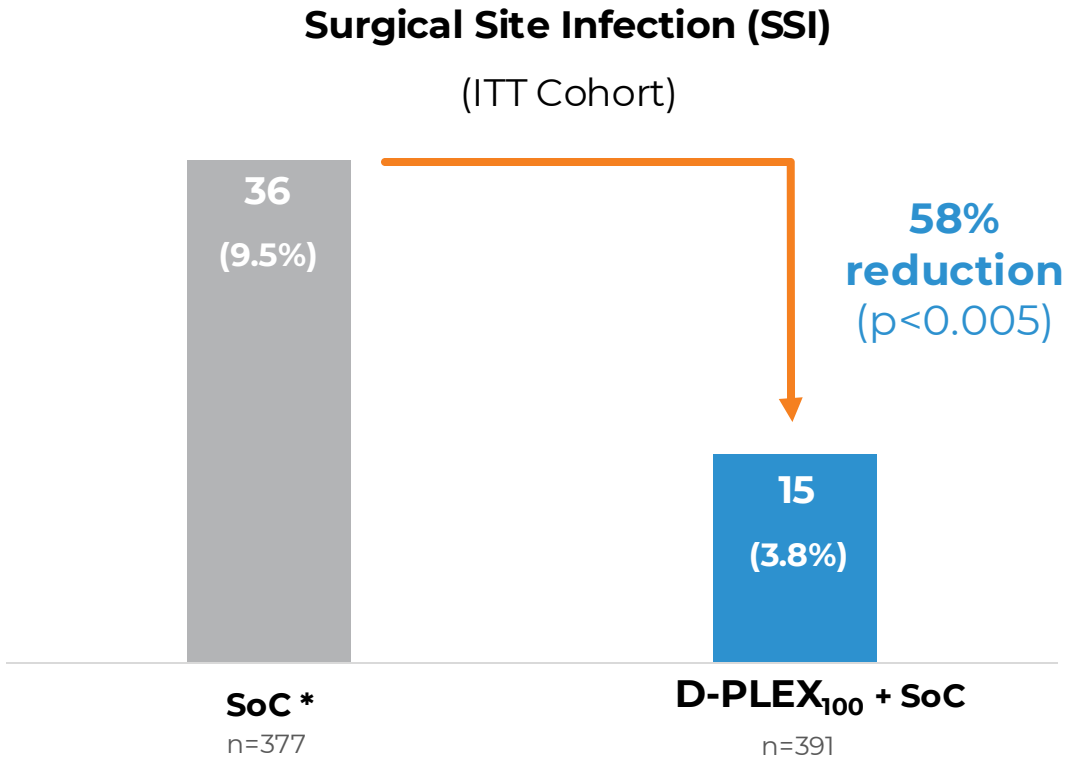


* SoC - Standard of Care

Key Secondary Efficacy Endpoint #1

Surgical Site Infection rate – intention to treat population:

At least one abdominal incisional surgical site infection event, occurring within 30 days post abdominal (index) surgery in the population **of subjects with incision length >20 cm** (n=798 patients)

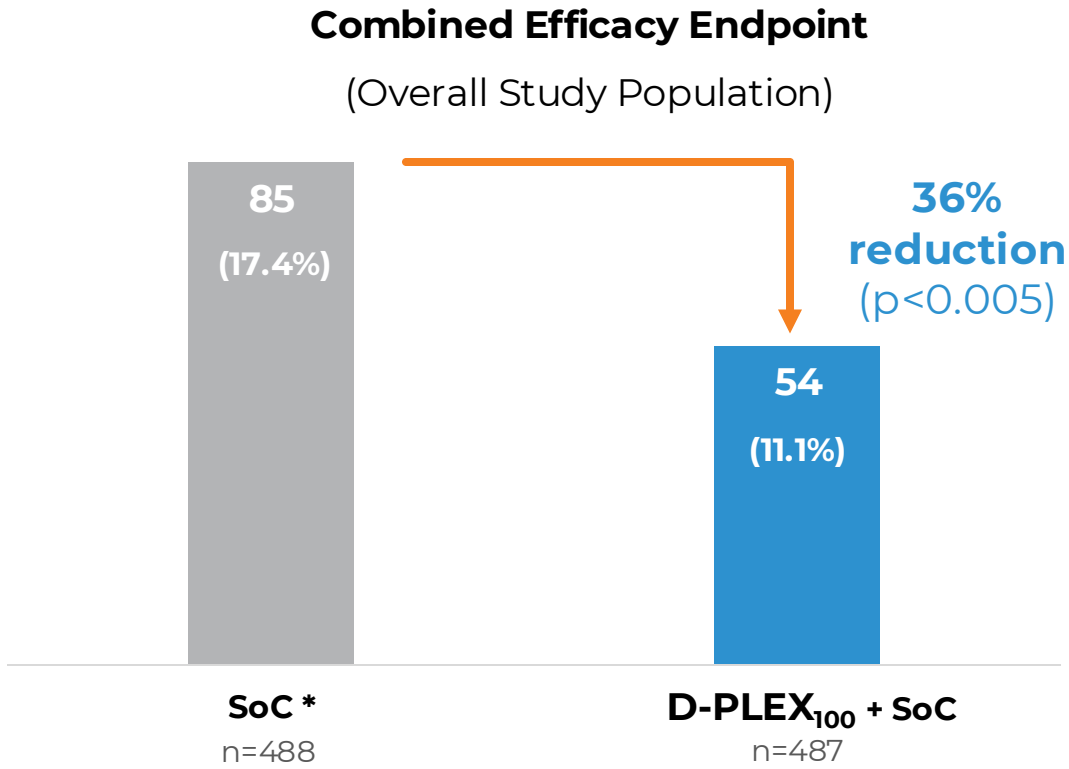


* SoC - Standard of Care

Key Secondary Efficacy Endpoint #2

Combined Efficacy Endpoint - overall study population:

A combination of at least one SSI event in the overall study population of subjects with **incision length >7 cm** (n=975 patients), all-cause mortality and re-interventions through the abdominal incision within 30 days post index surgery

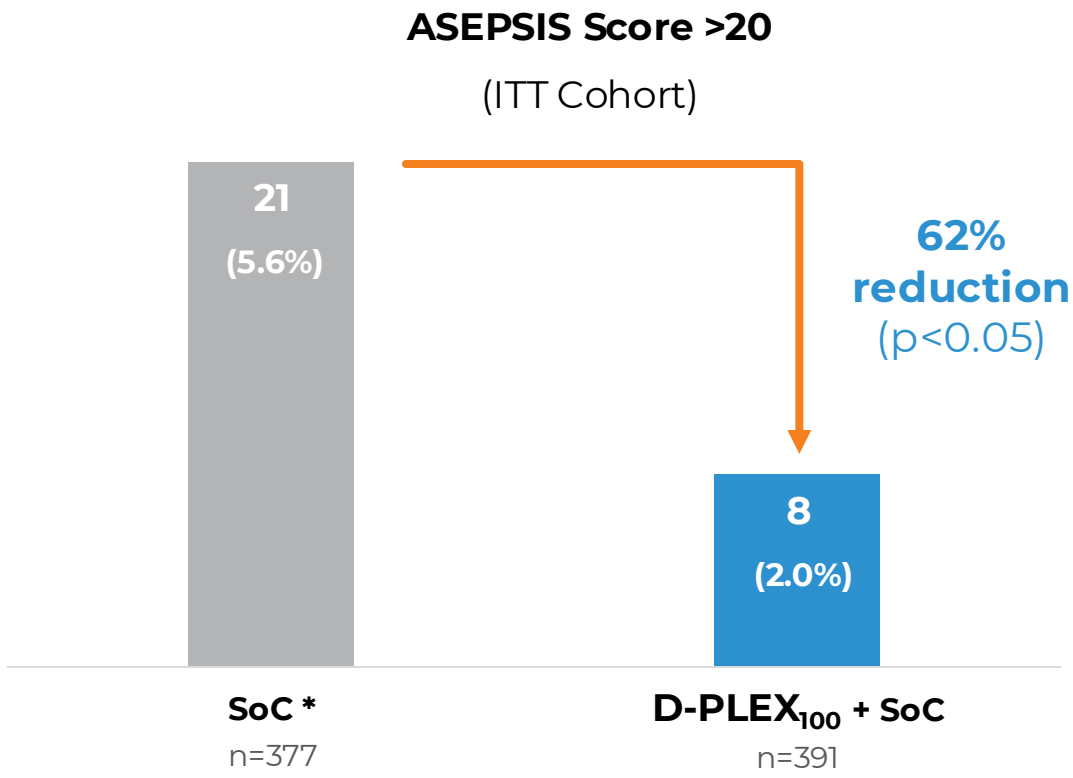


* SoC - Standard of Care

Key Secondary Efficacy Endpoint #3

ASEPSIS Score – ITT Cohort:

Number of subjects with ASEPSIS score >20 within 30 days post abdominal (index) surgery. The ASEPSIS score is a clinical tool used to objectively assess surgical wound infections.

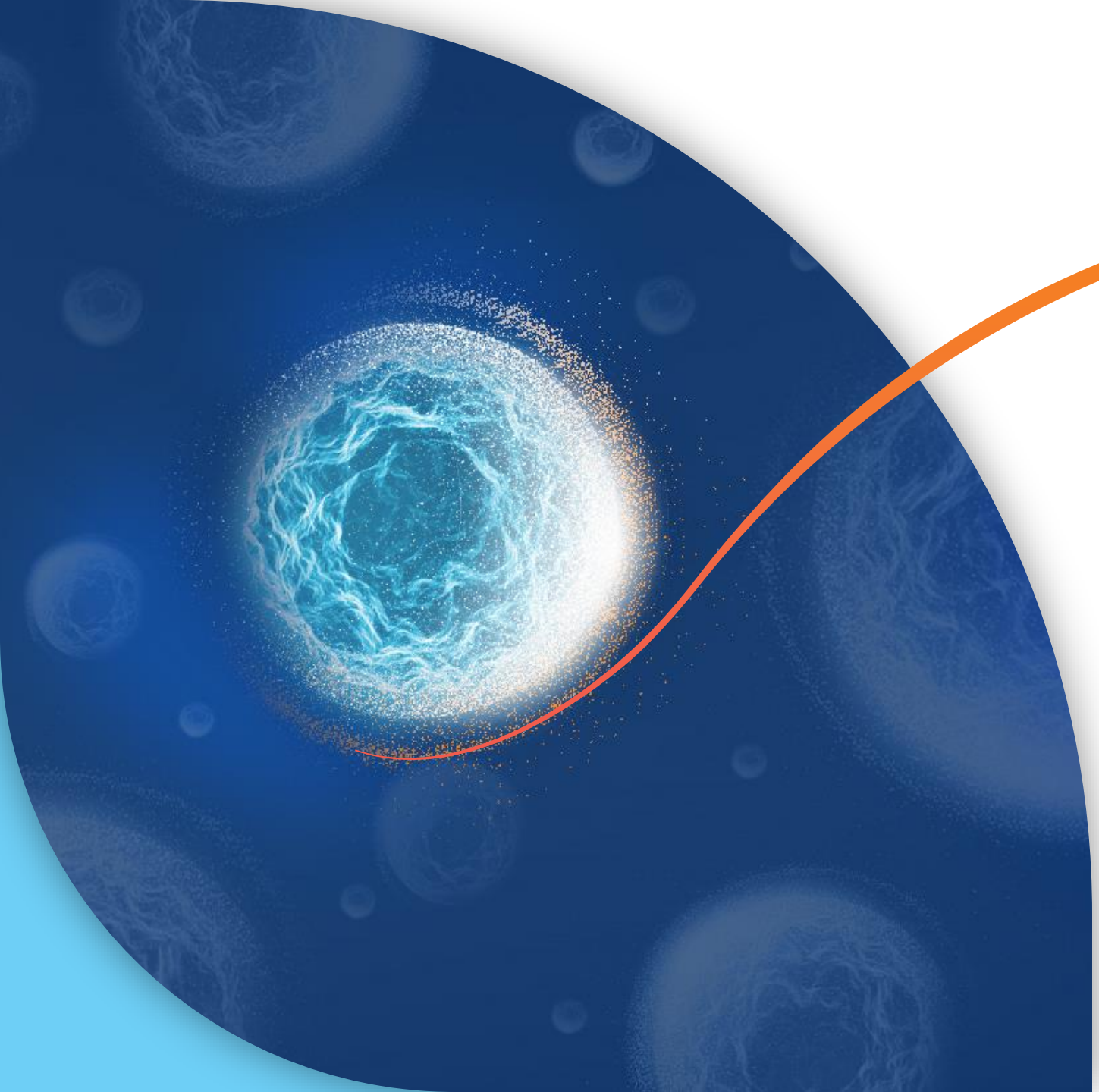


* SoC - Standard of Care

Next Steps

Pre-NDA meeting with the FDA planned by end of 2025

NDA submission planned for early 2026



Q & A