

# Clean-Up on IL-23

Integrating the Science of Inflammatory Targets  
into Treatment Decision-Making in IBD

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# Maria T. Abreu, MD, AGAF



Professor of Medicine

Professor of Microbiology and Immunology

Director, Crohn's & Colitis Center

University of Miami Miller School of Medicine

Miami, FL

President-Elect, American Gastroenterological Association (AGA)

# Jessica R. Allegretti, MD, MPH, AGAF

Director, Crohn's and Colitis Center

Director of Clinical Research

Director, Fecal Microbiota Transplant Program

Division of Gastroenterology, Hepatology, and Endoscopy

Brigham and Women's Hospital

Associate Professor of Medicine, Harvard Medical School

Boston, MA

# David T. Rubin, MD, AGAF

Joseph B. Kirsner Professor of Medicine  
Chief, Section of Gastroenterology, Hepatology, and Nutrition  
Director, Inflammatory Bowel Disease Center  
University of Chicago Medicine  
Chicago, IL

# Learning Objectives



1

Assess the role of various pro-inflammatory cytokines to inflammation in the pathogenesis of IBD.

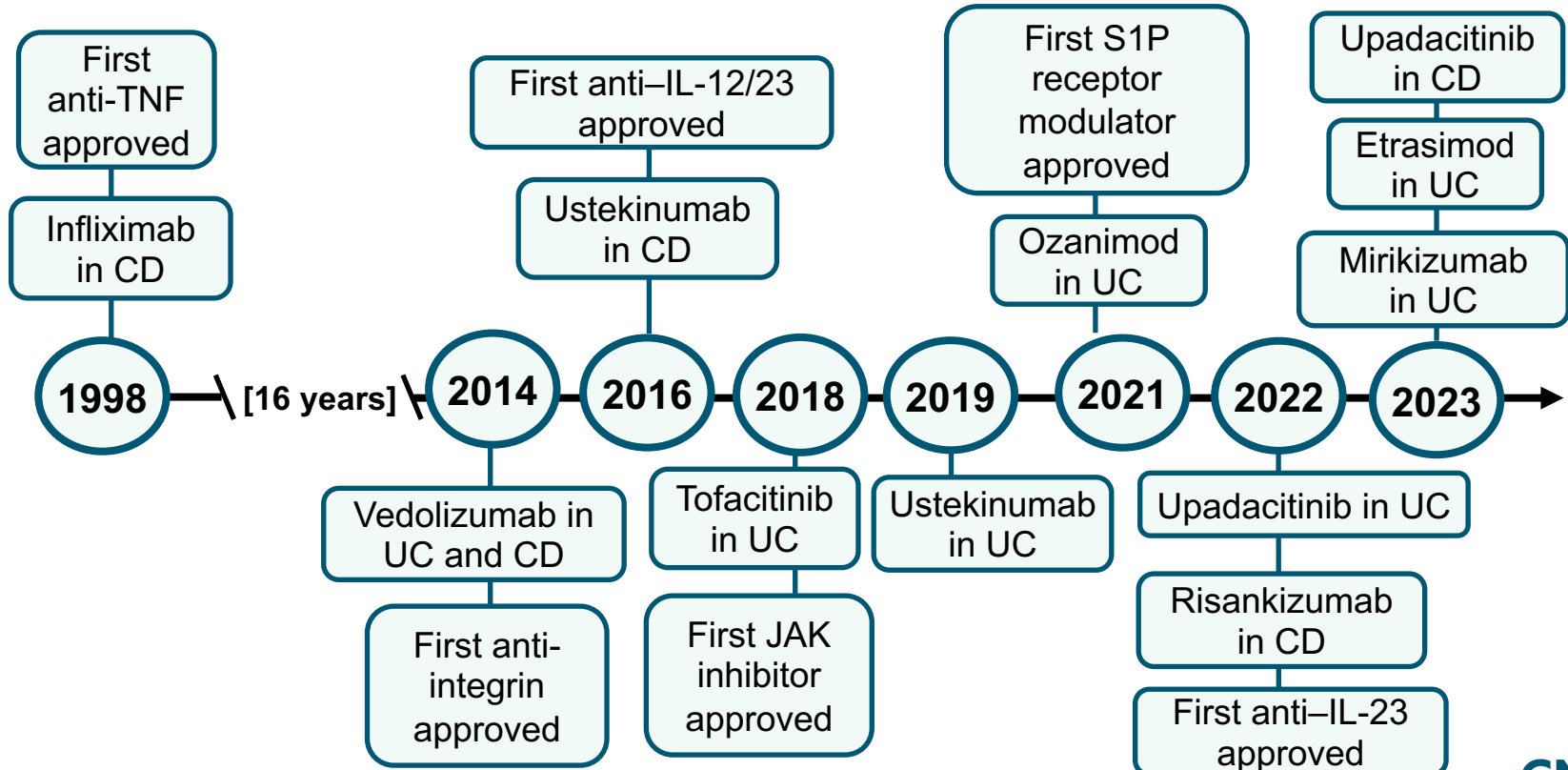
2

Classify the role of the IL-23 and Th17 pathway in IBD pathogenesis.

3

Evaluate the potential clinical implications of CD64 receptor binding by anti-IL-23 mAbs in the treatment of IBD.

# Evolution of IBD Treatment Landscape





# How Do We Put Together the Puzzle of Therapy Selection?

## DRUG

### Efficacy

- Indication
- Rapidity of onset
- Durability
- Pharmacokinetics/TDM
- Combination vs. monotherapy
- Positioning and sequence

### Safety

- Infection
- Cancer
- Specific concerns by agent or mechanism



## PATIENT

### Individual Characteristics

- Age
- Stages of disease
- Comorbidities and other inflammatory conditions
- Preferences
- Access to treatment

### Disease Characteristics

- CD vs. UC
- Disease behavior/complication
- Disease severity
- Early vs. late
- EIMs
- Treatment history

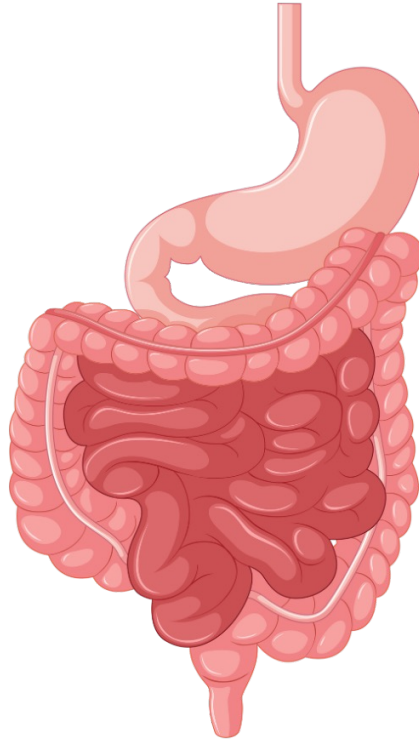
# IBD Pathogenesis

## Genetics

- IGRM
- NOD<sub>2</sub>
- IL23R
- ATG16L1
- LRRK2
- IBD5
- others

## Environment

- Diet
- Lifestyle
- Smoking
- Stress
- Drugs
- Antibiotics
- Infection
- Latitude
- others



## Immunology

- Immune dysregulation
- Impaired epithelial barrier function
- Defective autophagy
- Skewed lymphocyte populations
- Altered cytokine production

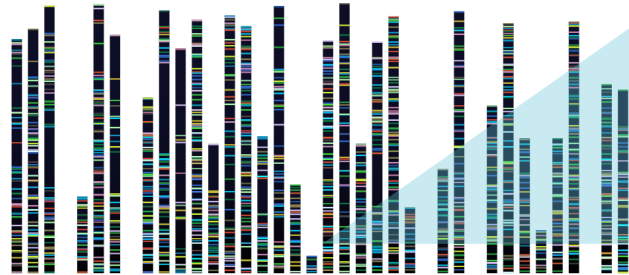
## Gut Microbiome

- ↑ Enterobacteriaceae
- ↑ Pasteurellaceae
- ↑ Veillonellaceae
- ↑ Fusobacteriaceae
- ↓ Erysipelotrichales
- ↓ Bacteroidales
- ↓ Clostridiiales

# Genetic Link to IL-23 and IBD



Genome-wide  
association studies



IL-23-R variants  
protective against  
CD and UC

**G149R**  
**V362I**  
**R381Q**

## Variant effects:

- Lower level surface receptor expression
- Lower activation of IL-23-R pathway
- Impaired IL-23-R maturation and stability

R = receptor.

El Hadad, et al. *Mol Diagn Ther.* 2024;28(1):27-35. Sivanesan D, et al. *J Biol Chem.* 2016;291(16):8673-8685.

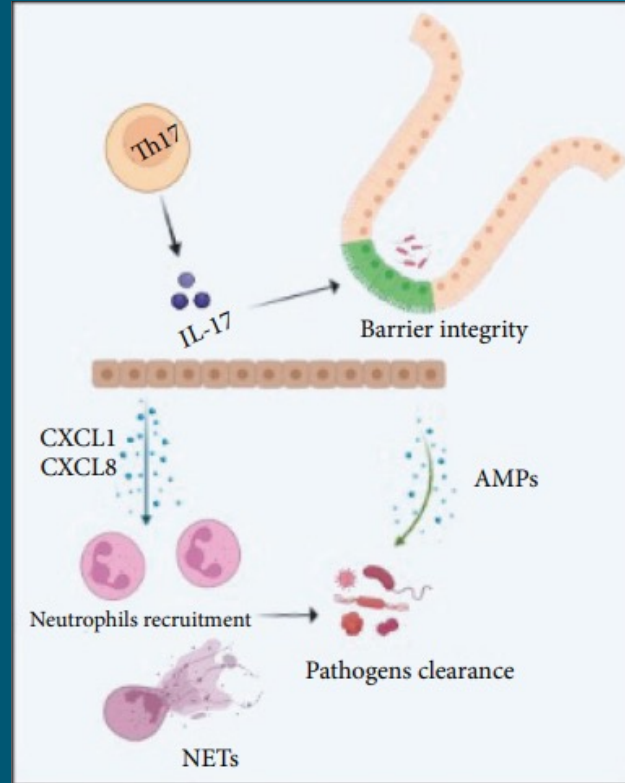
# Why Target IL-23 in IBD?

- ▶ Inhibition of IL-23 decreases mucosal inflammation and improves epithelial barrier integrity
- ▶ Inhibiting IL-23 suppresses gut inflammation in T-cell mediated colitis
- ▶ Anti-IL-23 therapy preserves protective IL-17 gut functions
  - ▶ Animal models of IL-17 blockade in colitis had mixed results
  - ▶ Trials of anti-IL-17A/IL-17A receptor antagonists in IBD resulted in worse outcomes vs placebo

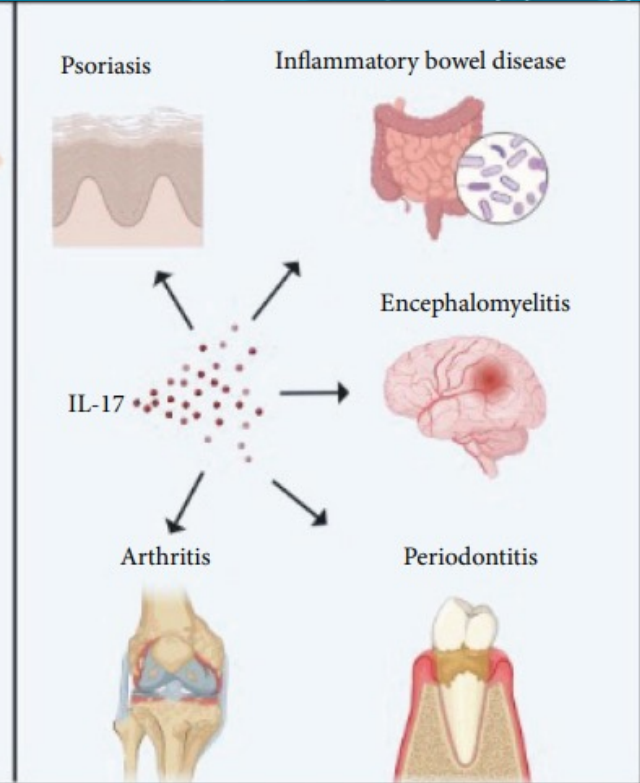


# Role of IL-17 in Pathogenic and Protective Immunity

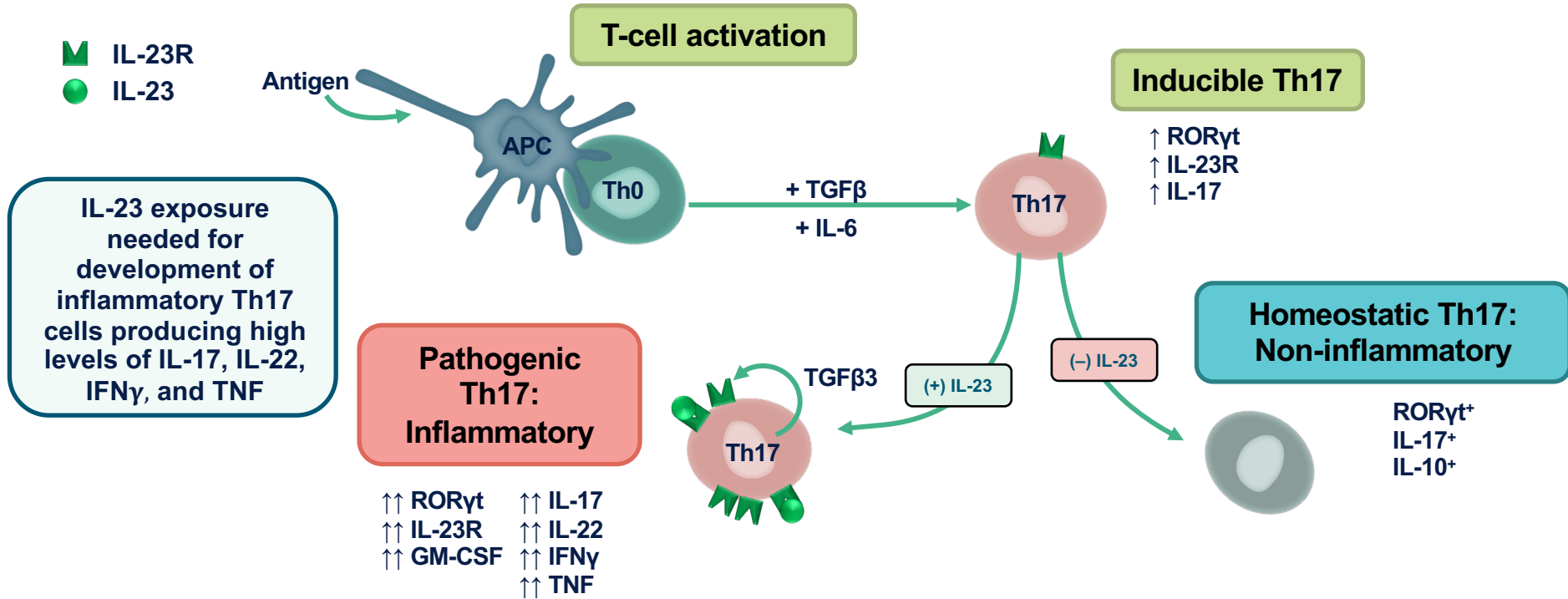
Protective



Pathogenic

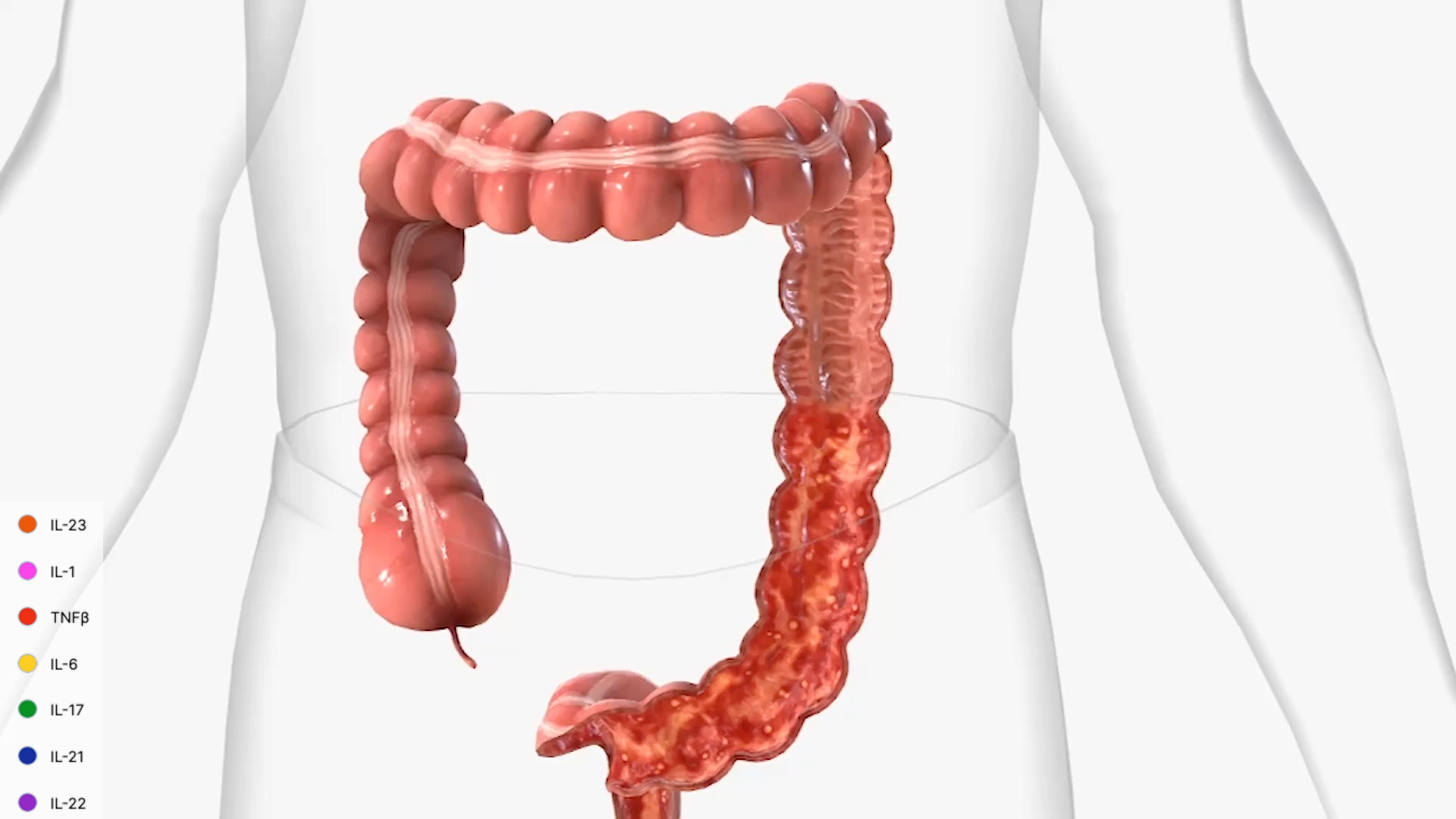


# IL-23 Drives Development of Inflammatory Pathogenic Th17 Cells



APC = antigen-presenting cell; GM-CSF = granulocyte-macrophage colony-stimulating factor; IFN = interferon; RORγt = retinoic acid receptor-related orphan receptor γt; TGF = transforming growth factor.

Adapted from Zúñiga LA, et al. *Immunol Rev.* 2013;252(1):78–88. Gaffen SL, et al. *Nat Rev Immunol.* 2014;14(9):585–600. Schmitt H, et al. *Front Immunol.* 2021;12:622934.



● IL-23

● IL-1

● TNFβ

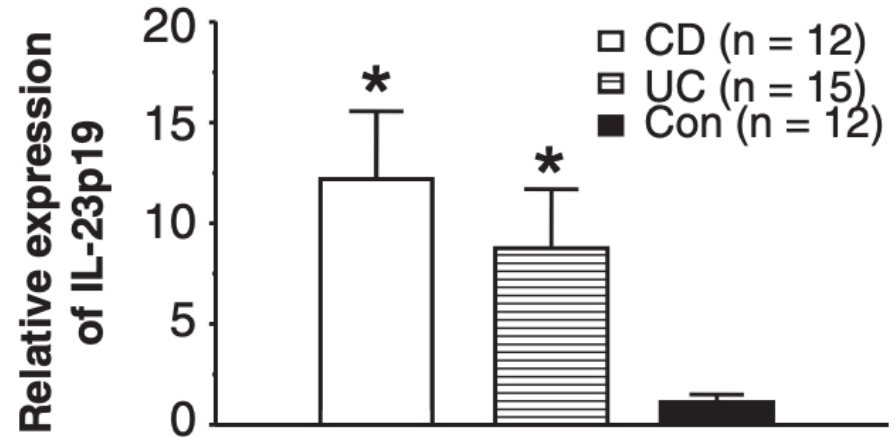
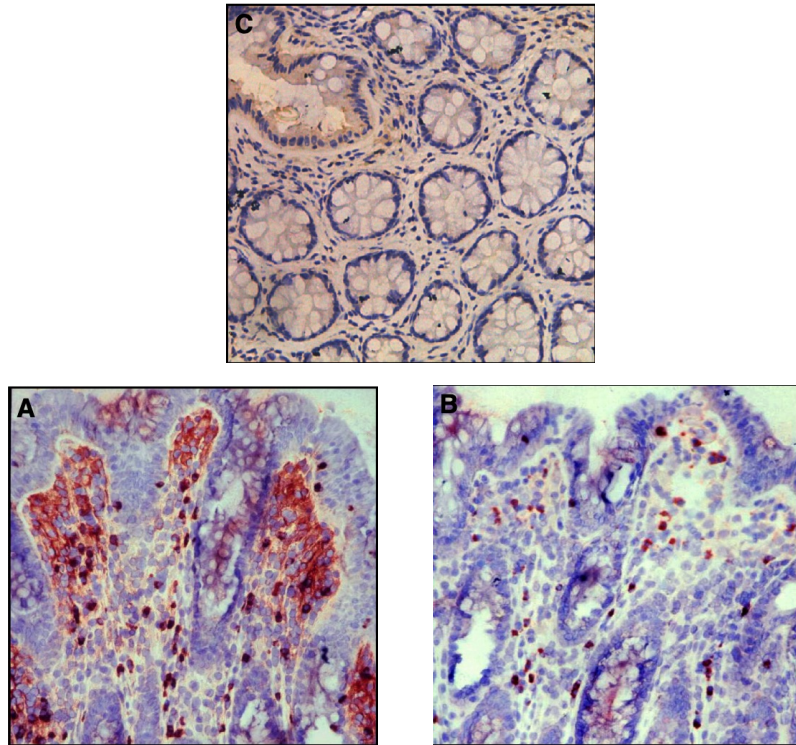
● IL-6

● IL-17

● IL-21

● IL-22

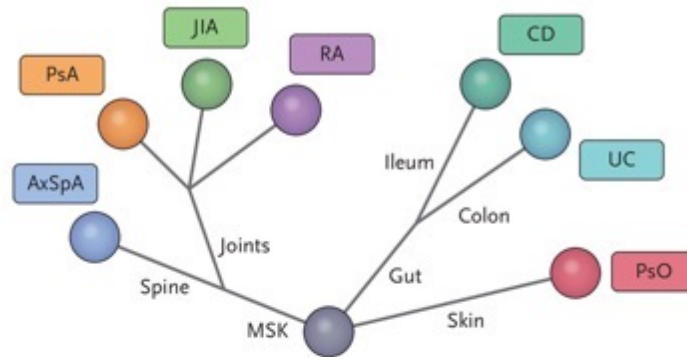
# IL-23 Expression in Patients with IBD





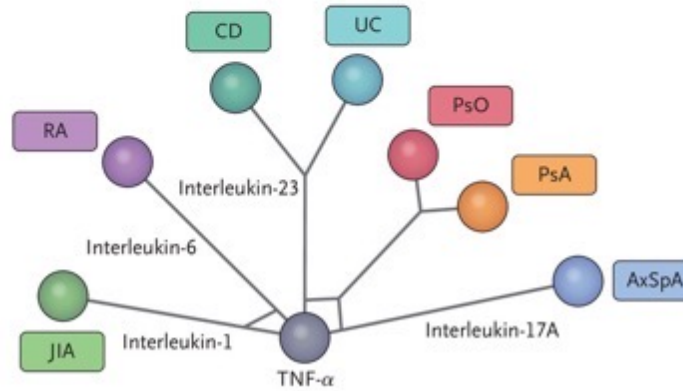
# Cytokine Connections in Immune-Mediated Inflammatory Diseases

Organ-Based Concept



|       | Joints      | Spine       | Ileum       | Colon       | Skin        |
|-------|-------------|-------------|-------------|-------------|-------------|
| RA    | Dark Brown  | Light Brown | White       | White       | White       |
| PsA   | Dark Brown  | Light Brown | Light Brown | Light Brown | Light Brown |
| JIA   | Dark Brown  | Light Brown | White       | White       | White       |
| AxSpA | Light Brown | Dark Brown  | Light Brown | Light Brown | Light Brown |
| CD    | Light Brown | Light Brown | Dark Brown  | Light Brown | Light Brown |
| UC    | Light Brown | Light Brown | White       | Dark Brown  | Light Brown |
| PsO   | Light Brown | Light Brown | Light Brown | Light Brown | Dark Brown  |

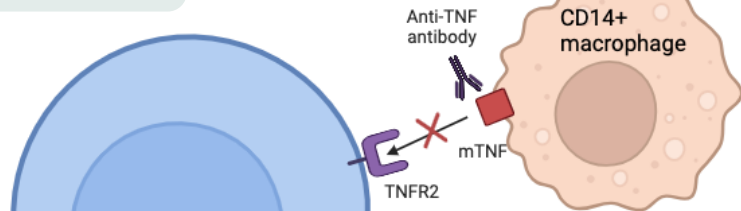
Signature Cytokine-Based Concept



|       | TNF- $\alpha$ | Interleukin-6 | Interleukin-23 | Interleukin-17A | Interleukin-1 |
|-------|---------------|---------------|----------------|-----------------|---------------|
| RA    | Dark Brown    | Dark Brown    | White          | White           | White         |
| PsA   | Dark Brown    | White         | Light Brown    | Light Brown     | White         |
| JIA   | Dark Brown    | Dark Brown    | White          | White           | Dark Brown    |
| AxSpA | Dark Brown    | White         | White          | Light Brown     | White         |
| CD    | Dark Brown    | White         | Dark Brown     | White           | White         |
| UC    | Dark Brown    | White         | Dark Brown     | White           | White         |
| PsO   | Dark Brown    | White         | Dark Brown     | Dark Brown      | White         |

# IL-23 Mediated Resistance to Anti-TNF

Anti-TNF responder

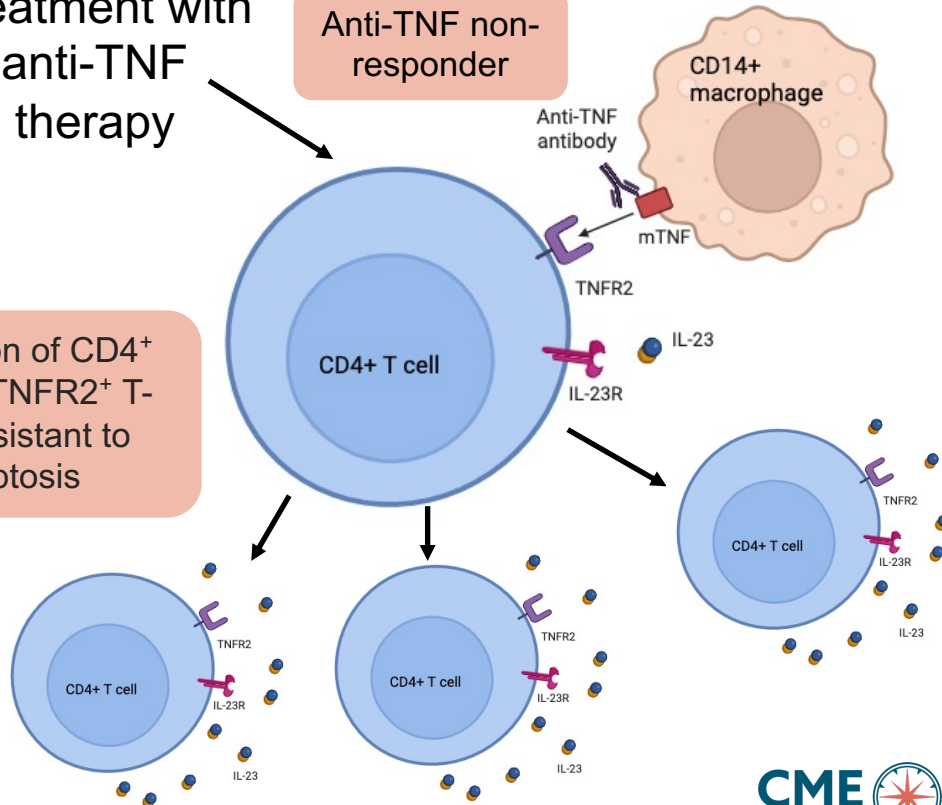


Induction of Apoptosis and Resolution of Inflammation

Treatment with anti-TNF therapy

Anti-TNF non-responder

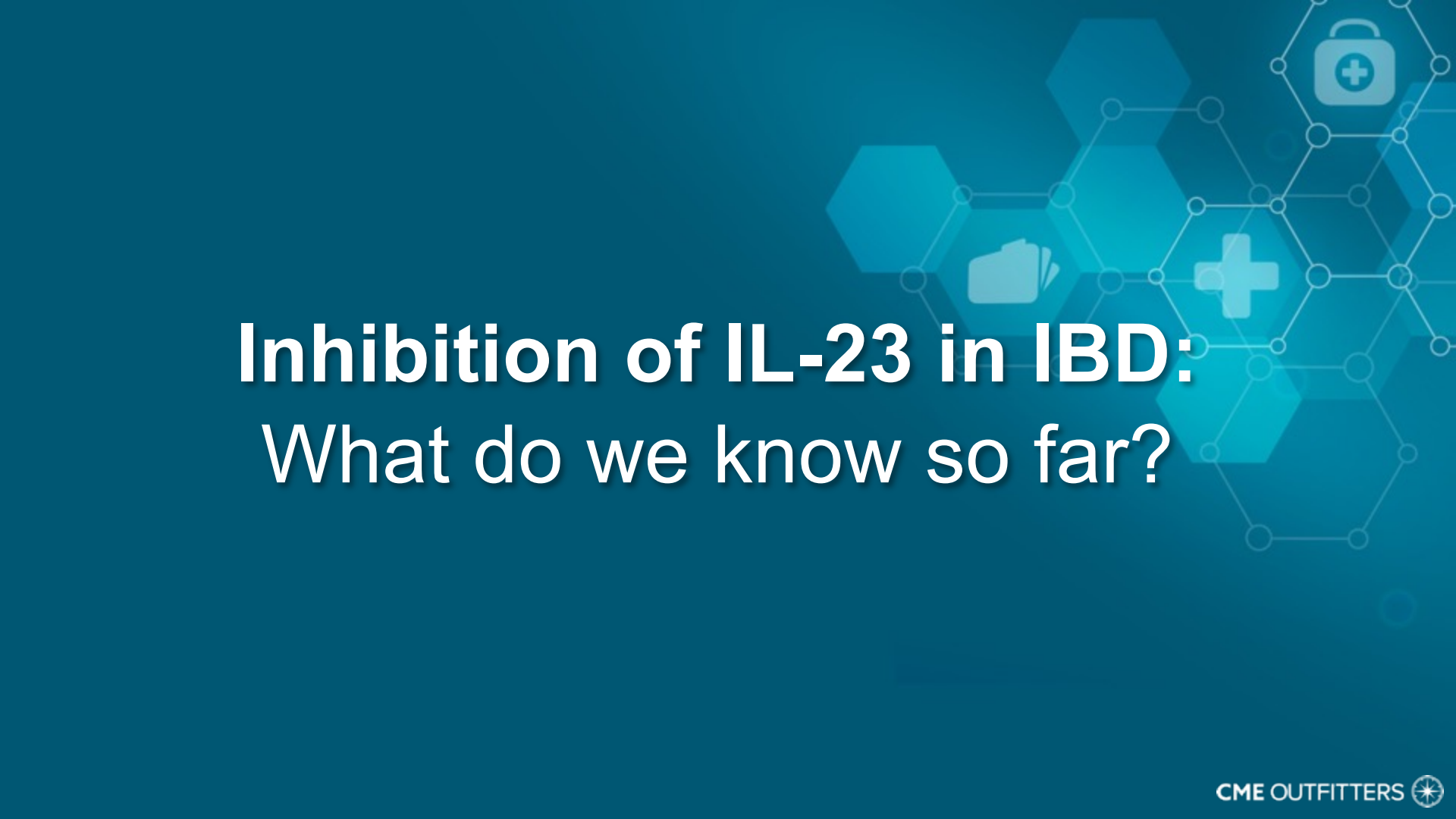
Expansion of CD4<sup>+</sup> IL-23R<sup>+</sup> TNFR2<sup>+</sup> T-cells resistant to apoptosis



# Audience Response

**Which of the following is a potential cause of anti-TNF non-response in patients with IBD?**

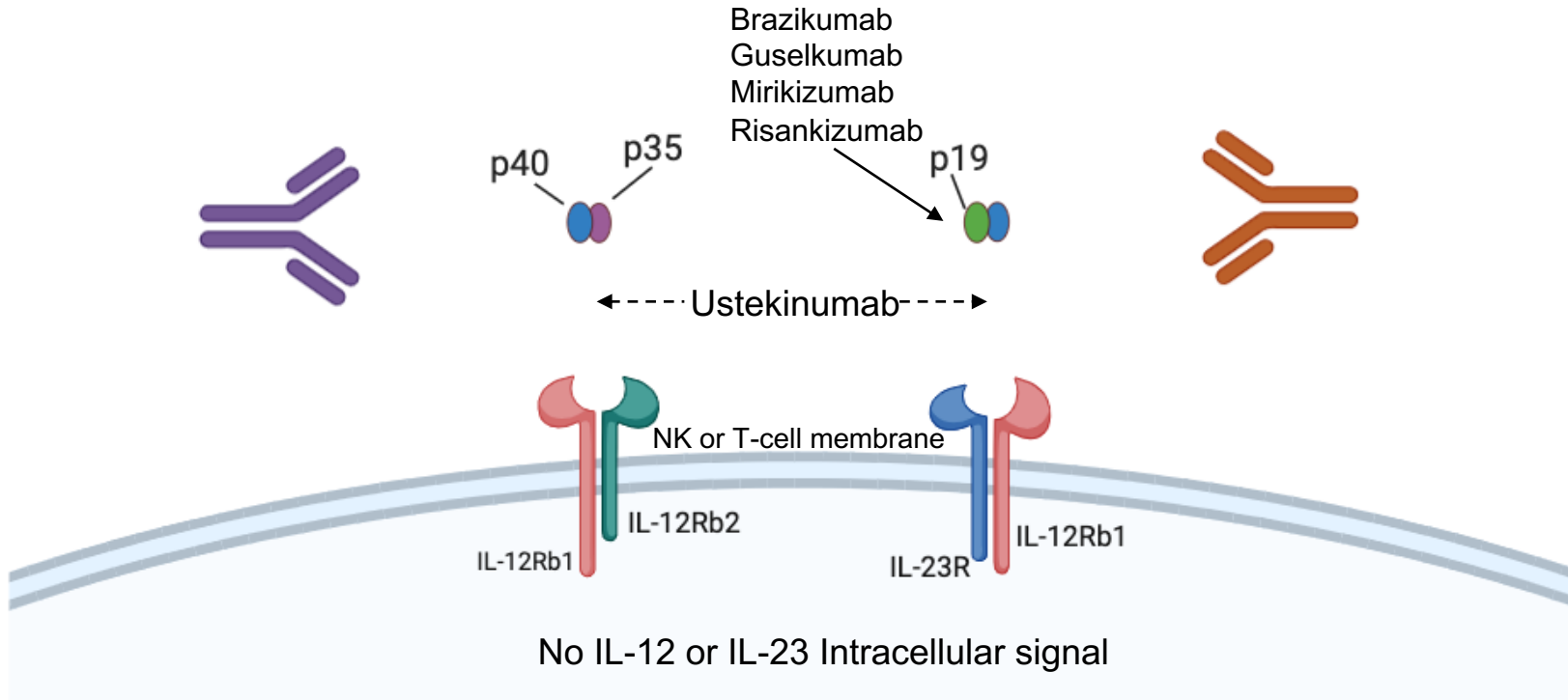
- A. Drug interactions between anti-TNF agents and immunomodulators
- B. Heightened production of IL-23 and development of apoptosis resistant T-cells
- C. Down regulation of TNF- $\alpha$  receptors on monocytes
- D. I don't know



# Inhibition of IL-23 in IBD: What do we know so far?



# Anti-p40 (IL-12/23) and Anti-p19 (IL-23)

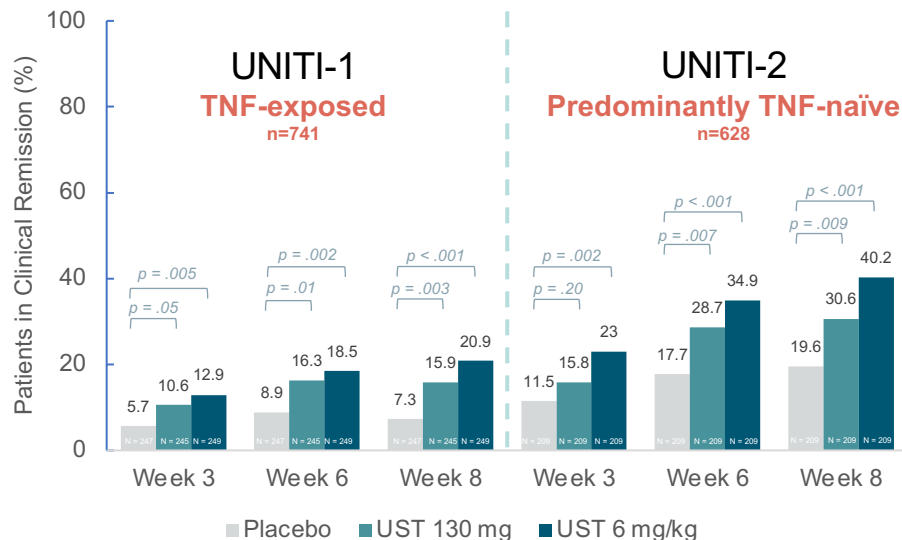


Adapted from Gately MK, et al. *Annu Rev Immunol.* 1998;16:495-521. Wilson NJ, et al. *Nat Immunol.* 2007;8(9):950-957. Nickoloff BJ, et al. *J Clin Invest.* 2004;113(12):1664-1675. Nestle FO, et al. *J Invest Dermatol.* 2004;123(6):xiv-xv. Created with Biorender.

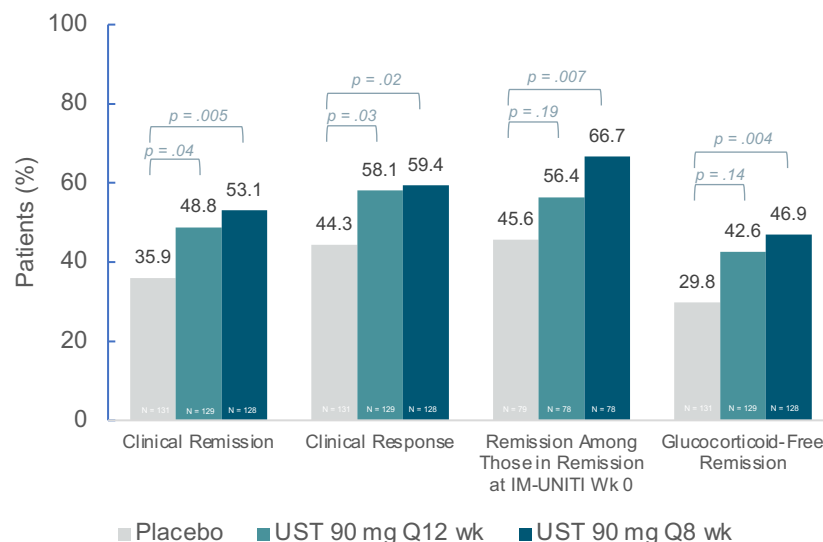


# UNITI: Ustekinumab for Induction and Maintenance of Remission in Refractory CD

## Induction of Remission UNITI-1 and UNITI 2



## Maintenance of Remission IM-UNITI



UST = ustekinumab.

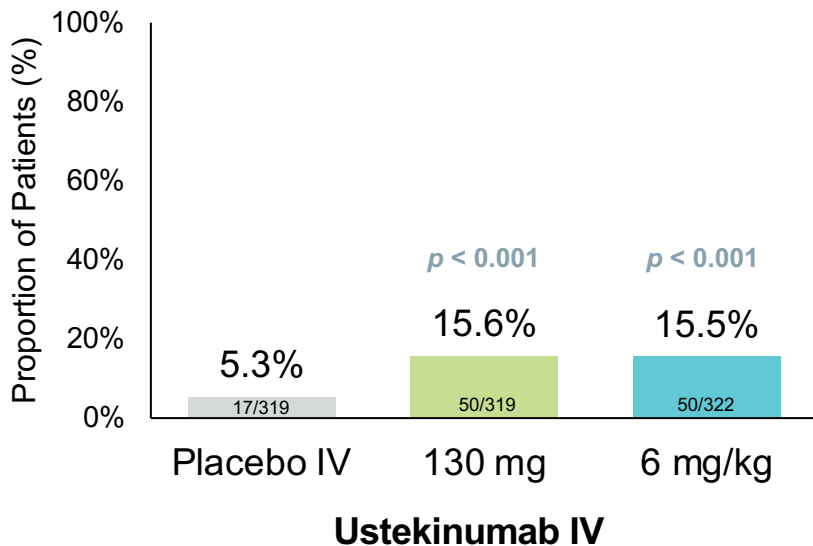
Feagan BG, et al. *N Engl J Med.* 2016;375(20):1946-1960. Sandborn W, et al. *Aliment Pharmacol Ther.* 2018;48(1):65-77.

# UNIFI: Ustekinumab for Induction and Maintenance in Moderate-Severe UC



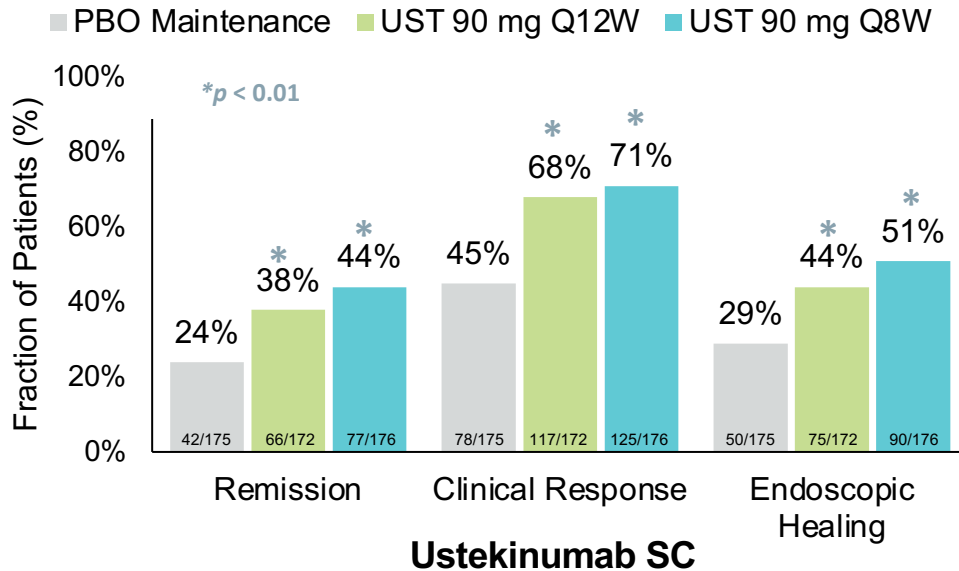
## Induction<sup>1</sup>

Primary Endpoint: Clinical Remission at Week 8 (N=961)



## Maintenance<sup>2</sup>

Clinical and Endoscopic Outcomes at Week 52 (N=397)



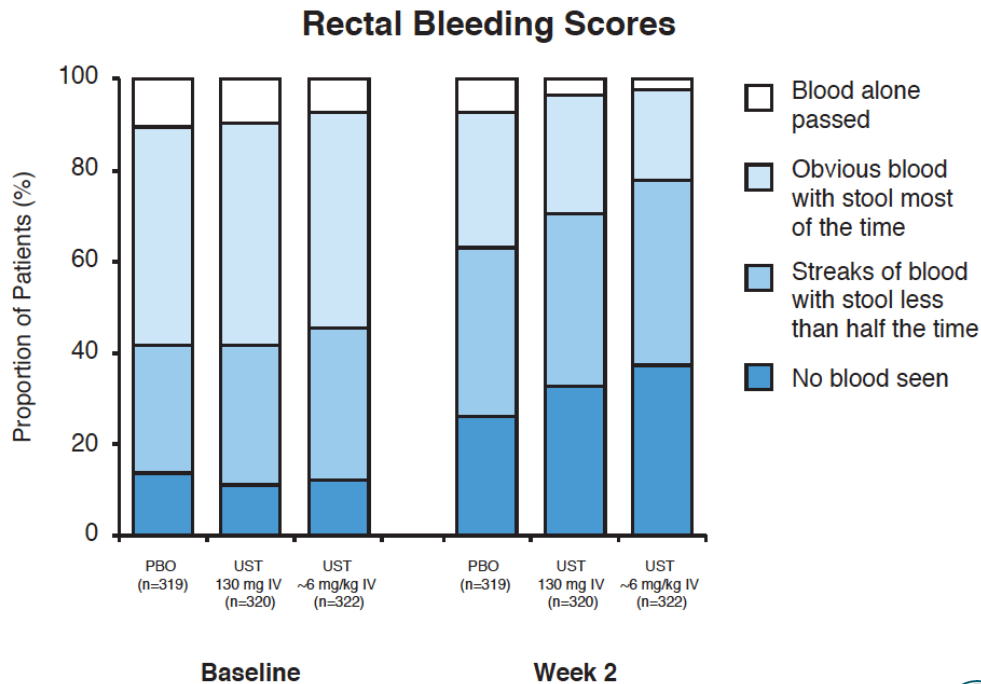
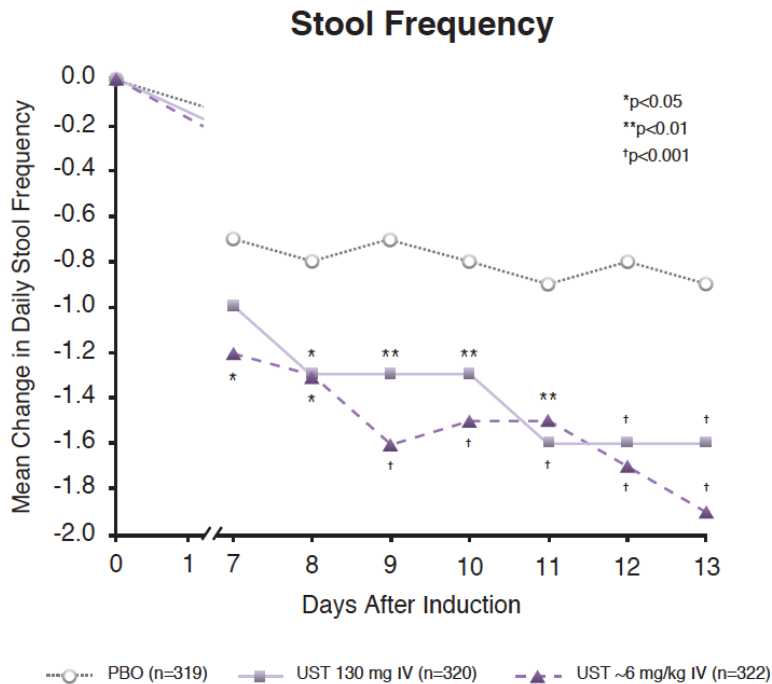
IV = intravenous; SC = subcutaneous.

Clinical Remission = Mayo Score  $\leq 2$  with no individual subscore  $> 1$ ; Endoscopic healing: Mayo endoscopic subscore 0 or 1.

1. Sands BE, et al. N Engl J Med 2019;381:1201-14. 2. Sandborn WJ, et al. Presented at ECCO 2019. OP37.

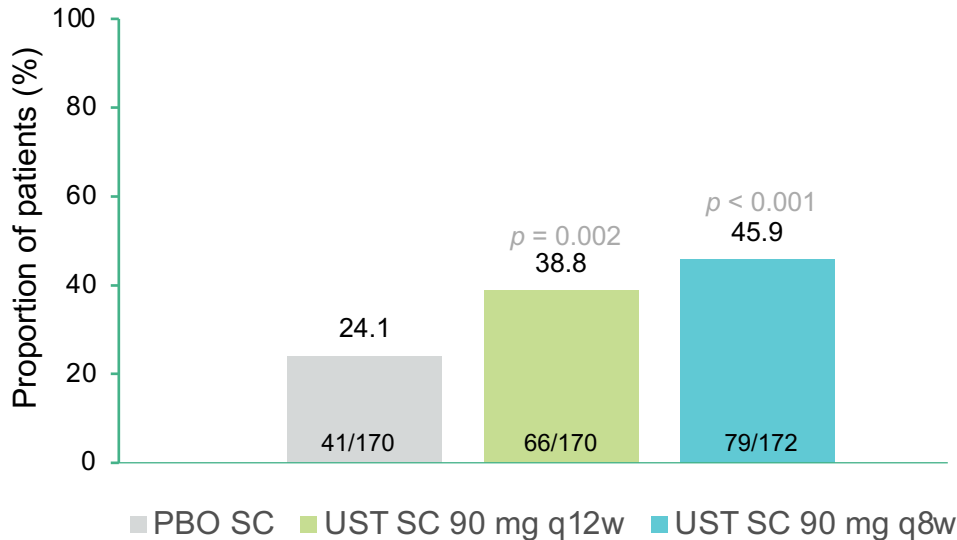
# UNIFI Induction Trial: Early Improvement after IV Ustekinumab Induction in Patients with UC

## Improvements in Stool Frequency and Rectal Bleeding after UST IV Induction



# UNIFI Maintenance: Histo-Endoscopic Mucosal Healing Through Maintenance Week 44

Significantly more patients experienced histo-endoscopic mucosal healing through 1 year\* with UST vs. PBO<sup>1,2</sup>



\*Week 44 in maintenance is 1 full year of UST treatment (8-week induction + 44-week maintenance = 52 weeks in total);

†The PBO population includes patients who received and responded to UST IV induction before receiving PBO SC. The maintenance PBO is therefore not a true PBO as these patients have already received UST IV at induction.

The UNIFI trial is the first trial to use histo-endoscopic mucosal healing as an endpoint

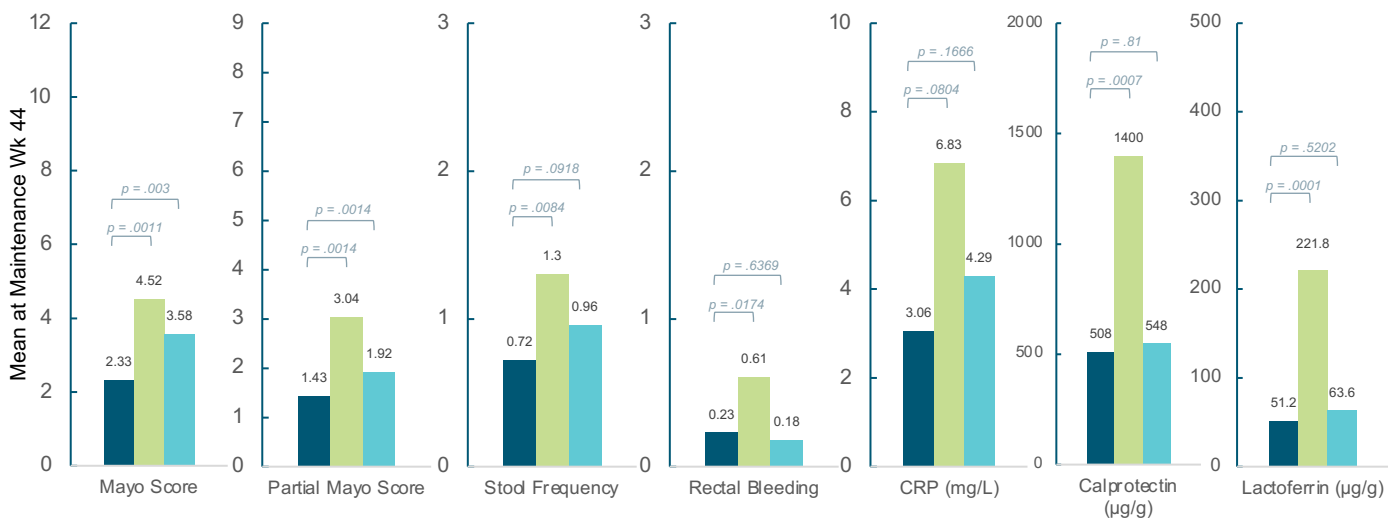
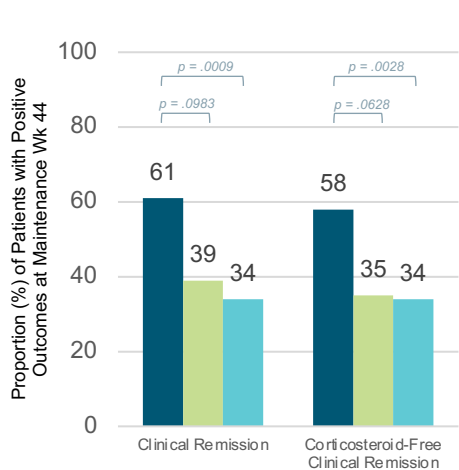
This endpoint includes:

- **Endoscopic improvement** (endoscopy subscore of 0 or 1)  
**AND**
- **Histological improvement** (0% to <5% neutrophils in epithelium, no crypt destruction, and no erosions, ulcerations or granulations)<sup>3</sup>



# Achieving Histo-Endoscopic Mucosal Healing is Superior to Either Histologic or Endoscopic Improvement Alone

## Data from the UNIFI Program

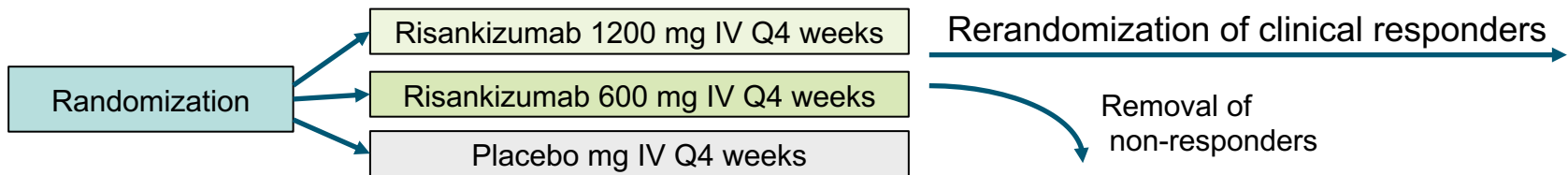
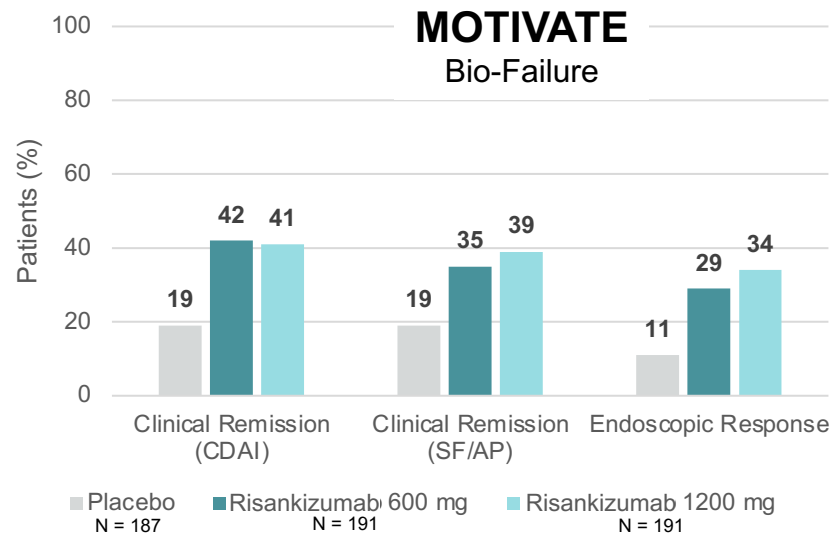
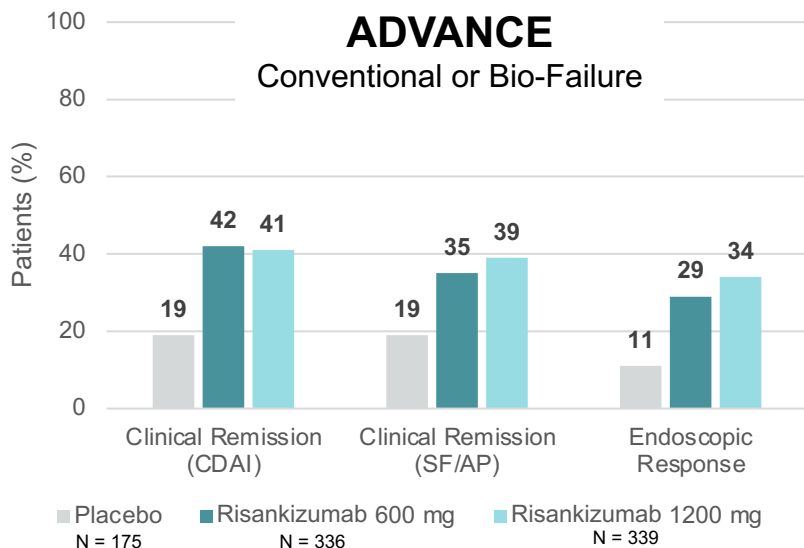


■ With histo-endoscopic mucosal healing at end of induction (N = 92)

■ With only endoscopic improvement at end of induction (N = 23)

■ With only histologic improvement at end of induction (N = 71)

# ADVANCE and MOTIVATE: Risankizumab Induction in CD

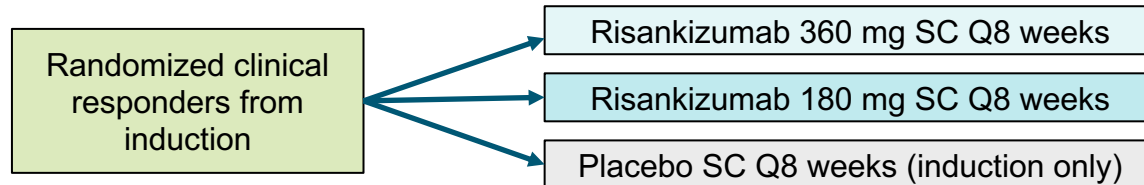
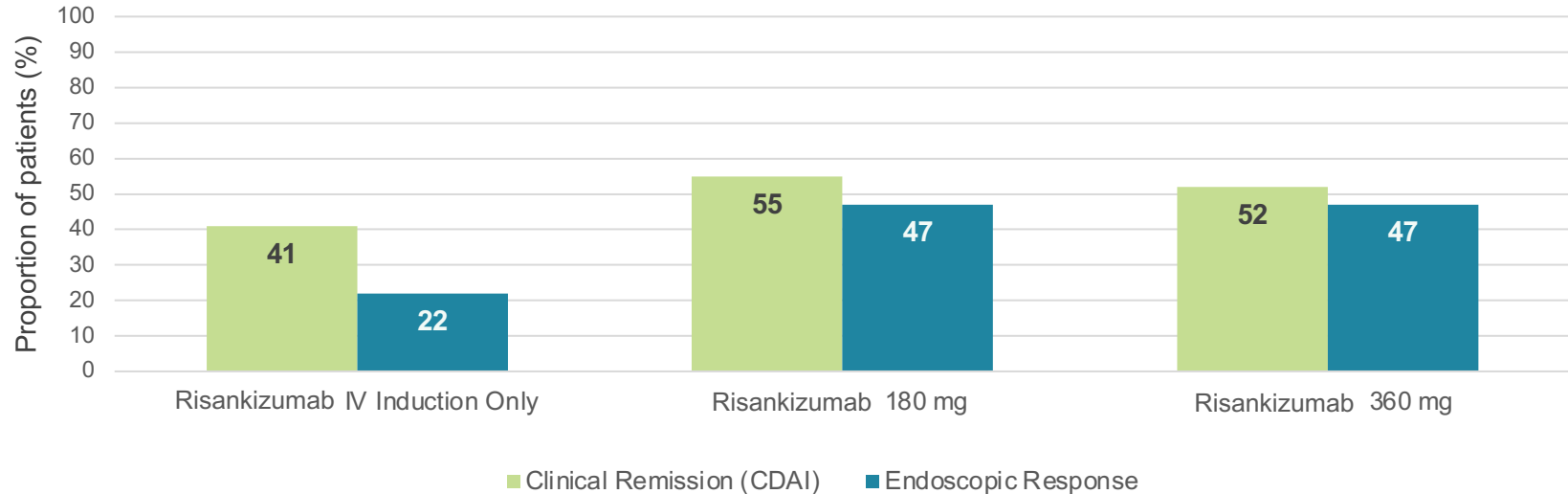


CDAI = Crohn's disease activity index; SF/AP = stool frequency/abdominal pain.; \*Clinical responders defined as  $\geq 30\%$  decrease in average daily stool frequency or APS and not worse than baseline; \*Endoscopic response defined as  $>50\%$  decline in SES-CD vs BL by central reviewer (or in pts with SES-CD of 4 at BL,  $\geq 2$ -point decrease vs BL); CDAI clinical remission a CDAI  $< 150$ .

D'Haens G, et al. *Lancet*. 2022;399(10340):2015-2030. Ferrante M, et al. *Lancet*. 2022;399(10340):2031-2046.

# FORTIFY: Risankizumab Maintenance in CD

## Week 52 Maintenance – All Patients

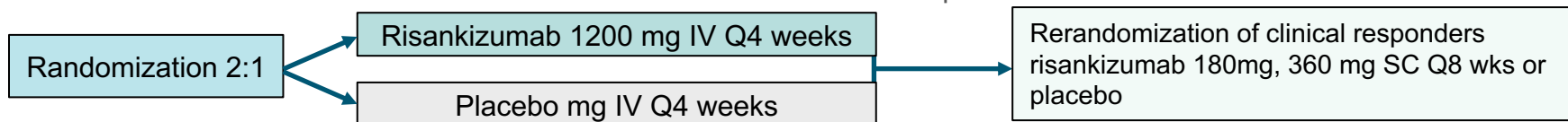
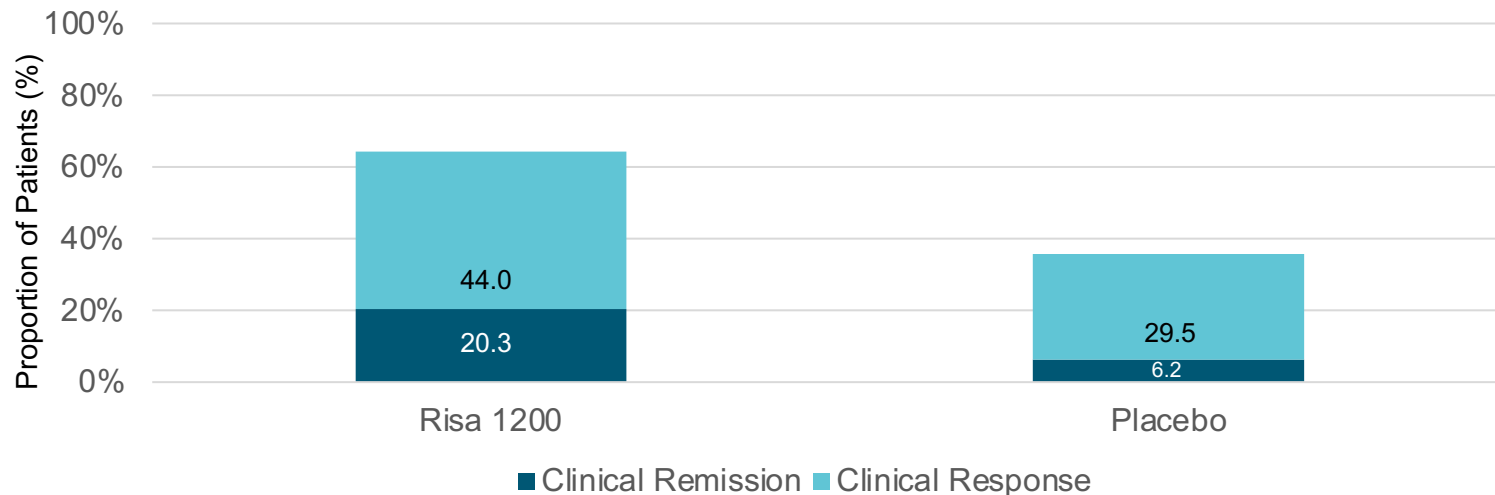


Endoscopic response defined as >50% decline in SES-CD vs BL by central reviewer (or in pts with SES-CD of 4 at BL,  $\geq 2$ -point decrease vs BL); CDAI clinical remission a CDAI < 150.

Ferrante M, et al. *Lancet*. 2022;399(10340):2031-2046.

# INSPIRE: Risankizumab Induction in UC\*

## Clinical Response and Remission at 12 Weeks

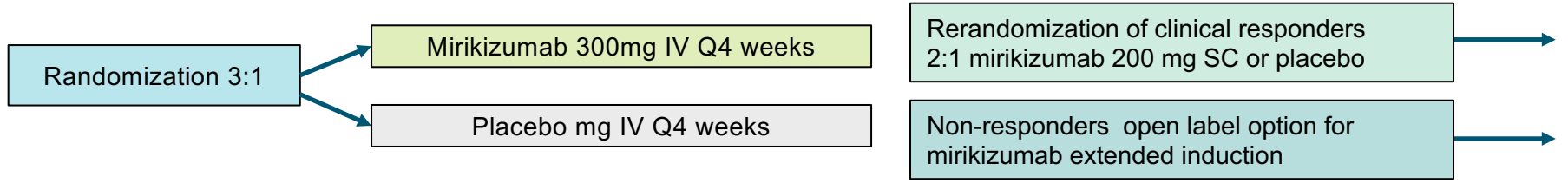
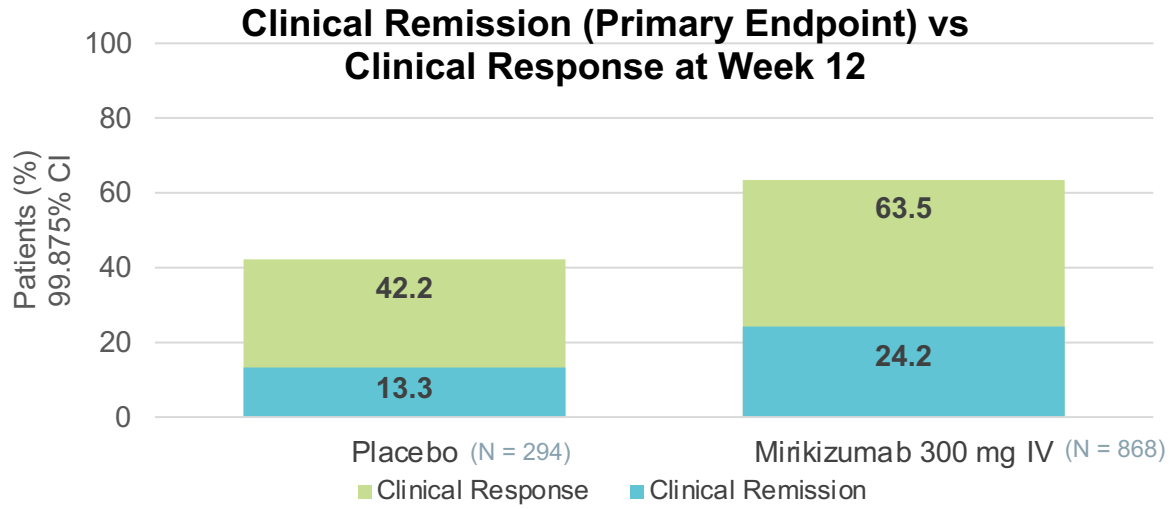


\*Risankizumab is not FDA-approved for the treatment of UC.

\*Clinical responders defined as  $\geq 30\%$  decrease in average daily stool frequency or APS and not worse than baseline; \*Endoscopic response defined as  $>50\%$  decline in SES-CD vs BL by central reviewer (or in pts with SES-CD of 4 at BL,  $\geq 2$ -point decrease vs BL); CDAI clinical remission a CDAI  $< 150$ .

Louis E, et al. *Am J Gastroenterol.* 2023;118(10S):S624-S625.

# LUCENT-1: Mirikizumab Induction in UC

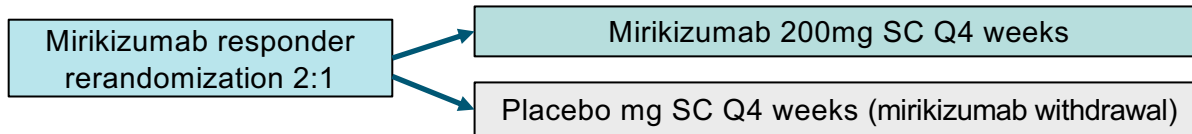
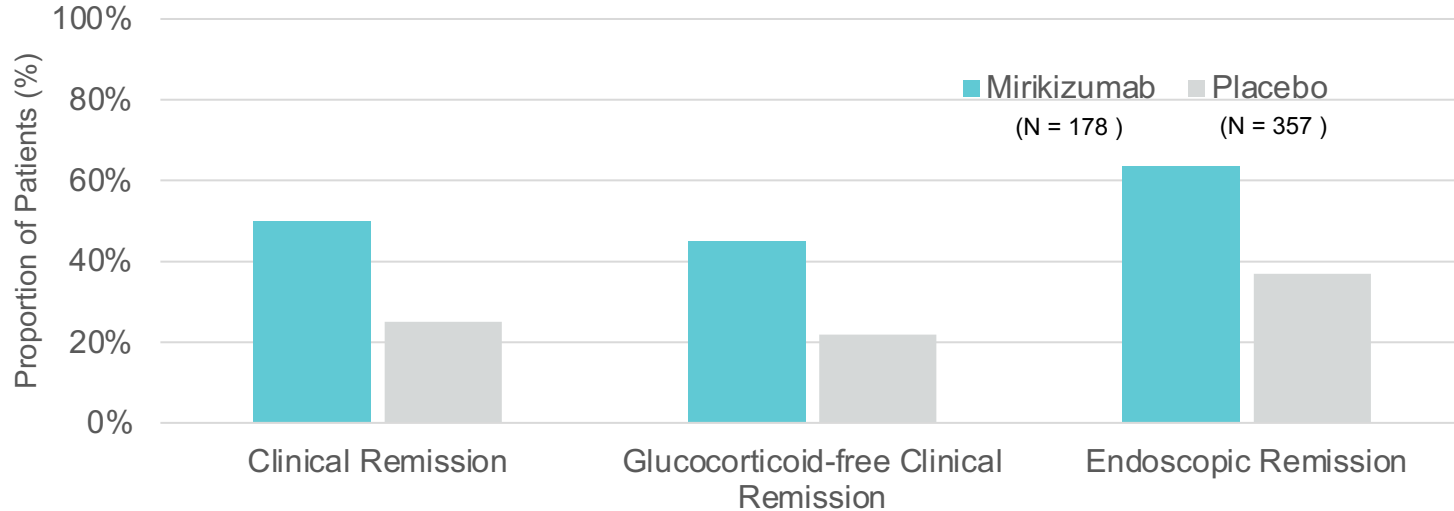


Clinical Remission: Stool frequency (SF) = 0, or SF = 1 with a  $\geq 1$ -point decrease from baseline; rectal bleeding (RB) = 0; endoscopic subscore (ES) = 0 or 1 (excluding friability); clinical response: MMS of  $\geq 2$  points and  $\geq 30\%$  decrease from baseline, and a decrease of  $\geq 1$  point in the RB subscore from baseline or a RB score of 0 or 1



# LUCENT-2: Mirikizumab Maintenance in UC

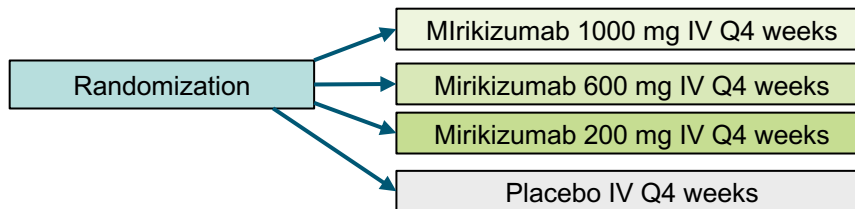
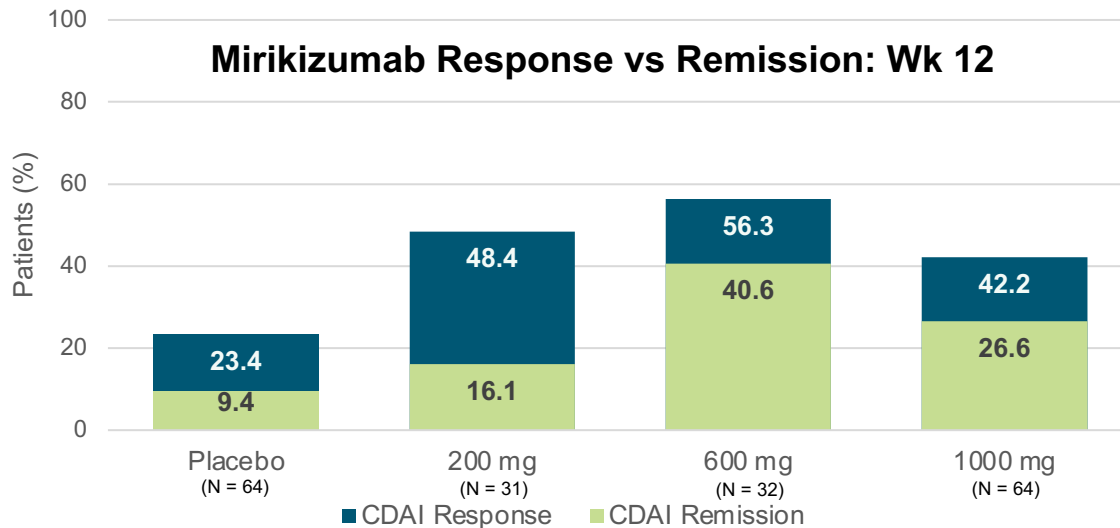
## Primary and Secondary Outcomes at 40 Weeks



Clinical Remission: Stool frequency (SF) = 0, or SF = 1 with a  $\geq 1$ -point decrease from baseline; rectal bleeding (RB) = 0; endoscopic subscore (ES) = 0 or 1 (excluding friability), Endoscopic Remission: ES = 0 or 1 (excluding friability), clinical remission at week 40, remission of symptoms at week 28, and no glucocorticoid use for  $\geq 12$  weeks before week 40

D'Haens G, et al. *N Engl J Med*. 2023;388:2444-2455.

# SERENITY: Mirikizumab\* Induction in CD

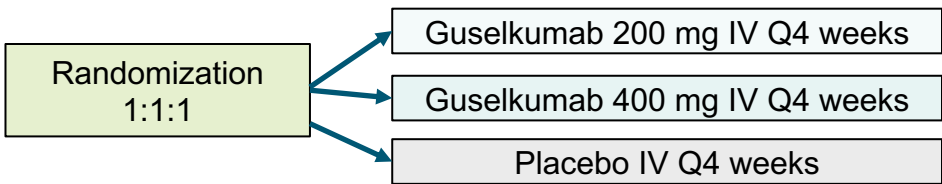


\*Mirikizumab is not FDA-approved for the treatment of CD.

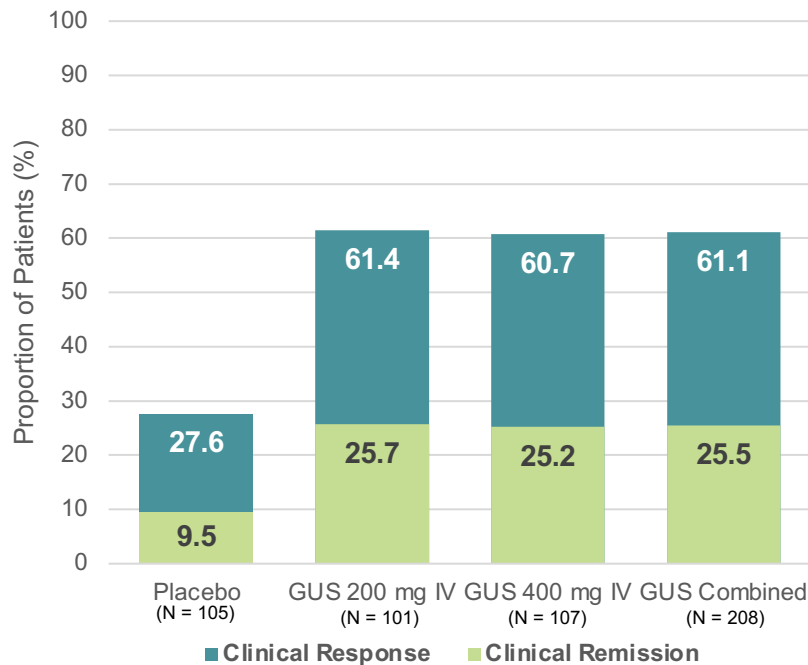
CDAl response = decrease from baseline of  $\geq 100$  points or score  $< 150$ ; CDAl remission = score  $< 150$ .

Sands BE, et al. *Gastroenterology*. 2022;162(2):495-508.

# QUASAR: Guselkumab Induction in UC\*



### Clinical Response and Clinical Remission at Week 12



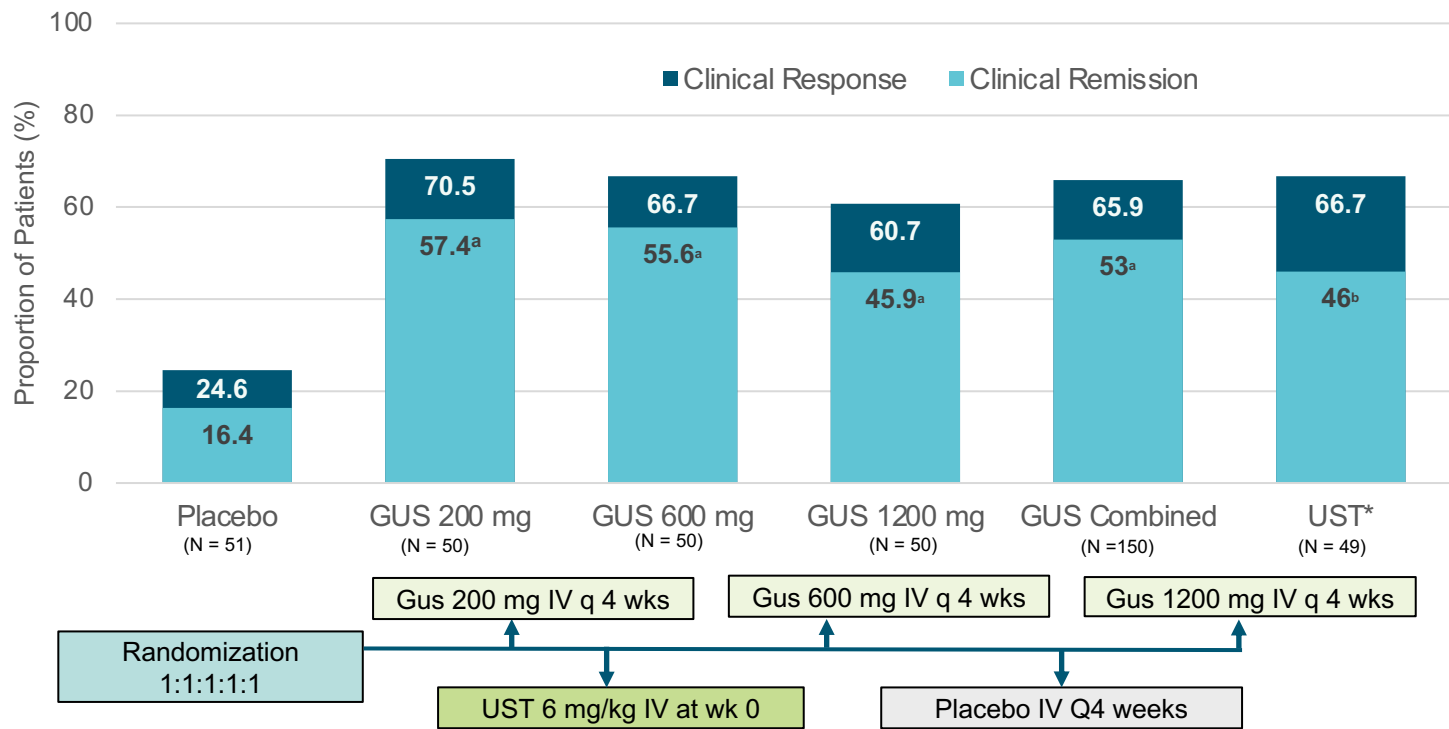
\*Guselkumab is not FDA-approved for the treatment of UC. GUS = guselkumab.

Clinical response = modified Mayo score decrease  $\geq 30\%$  and  $\geq 2$  points, rectal bleeding subscore  $\geq 1$ -point decrease or subscore of 0/1;

Clinical remission = Mayo stool frequency subscore of 0 or 1 and not increased from induction baseline, a Mayo rectal bleeding subscore of 0, and a Mayo endoscopy subscore of 0 or 1 with no friability present on the endoscopy

Peyrin-Biroulet L, et al. *Gastroenterology* 2023;165(6):1443-1457.

# GALAXI-1: Guselkumab Induction in CD<sup>\*\*</sup>

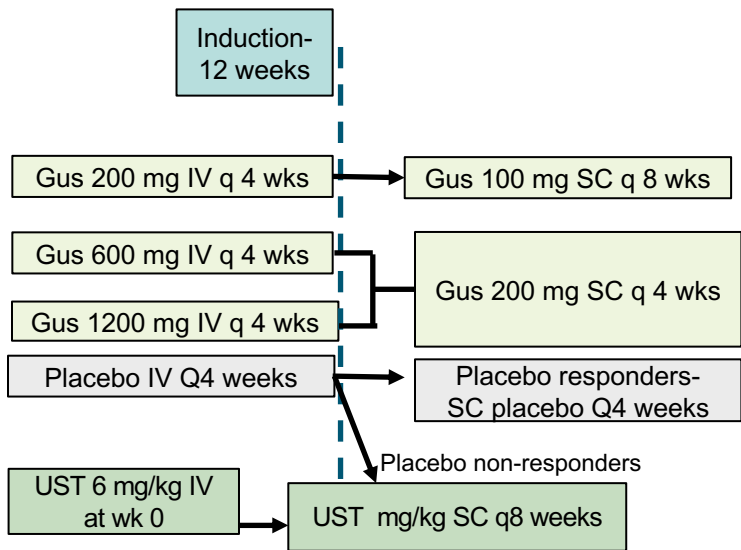


<sup>a</sup> $p < 0.001$  <sup>b</sup> $p = 0.001$ ; \*UST approx. 6 mg/kg IV  $\Rightarrow$  90 mg SC. Clinical Response = 100-point reduction from baseline CDAI score or CDAI < 150; Clinical Remission = CDAI < 150

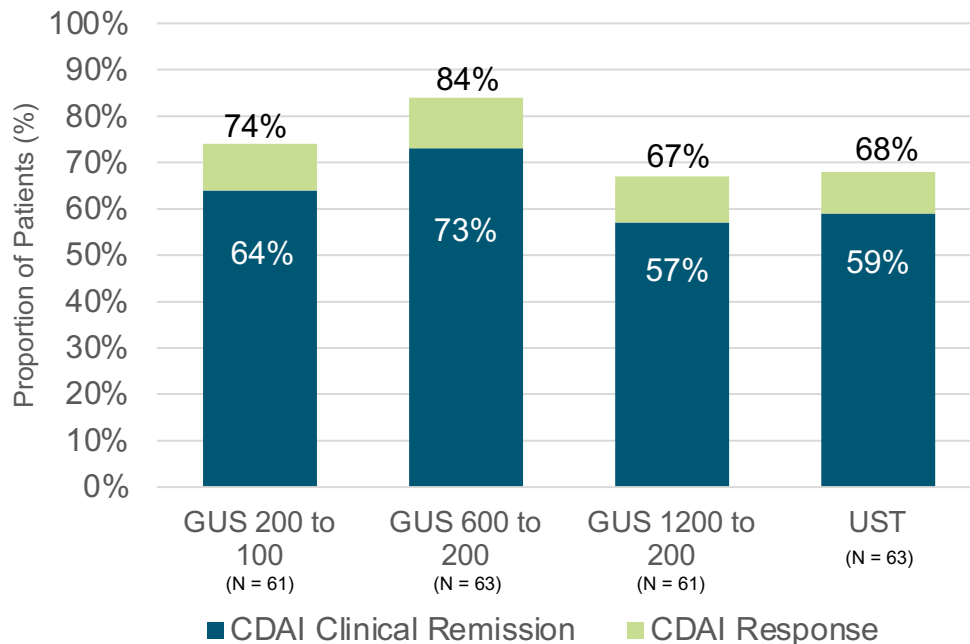
<sup>\*\*</sup>Guselkumab is not FDA-approved for the treatment of CD.

Sandborn W, et al. *Gastroenterology*. 2022;162(6):1650-1664.e8.

# GALAXI-1: Guselkumab\* Maintenance in CD



**CDAI Response and Remission at week 48**



\*Guselkumab is not FDA-approved for the treatment of CD.

Clinical Response = 100-point reduction from baseline CDAI score or CDAI < 150; Clinical Remission = CDAI < 150

Danese S, et al. *Lancet Gastroenterol Hepatol.* 2024;9(2):133-146.





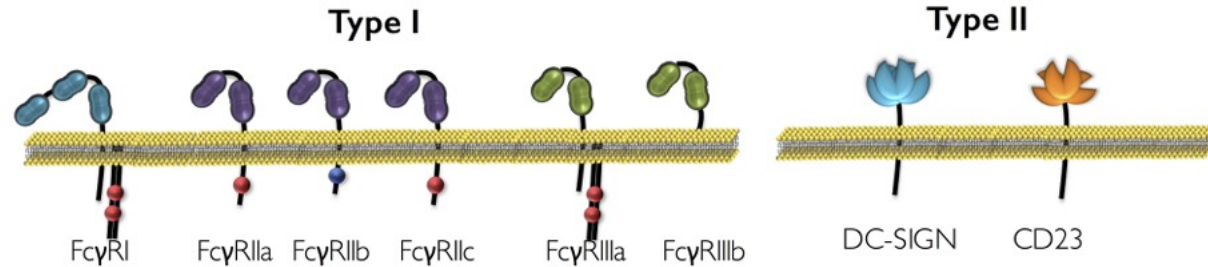
# How will we differentiate between IL-23 targeting agents?

# Audience Response

Which of the following was found in the MODIF-Y study when comparing binding affinity of guselkumab and risankizumab to CD64 receptors?

- A. Binding of both guselkumab and risankizumab to CD64
- B. Binding of guselkumab only to CD64
- C. Binding of risankizumab only to CD64
- D. I don't know

# What are Fcγ receptors and CD64 receptors?



|                 | Type I |         |         |         |          |          | Type II |      |
|-----------------|--------|---------|---------|---------|----------|----------|---------|------|
|                 | FcγRI  | FcγRIIa | FcγRIIb | FcγRIIc | FcγRIIIa | FcγRIIIb | DC-SIGN | CD23 |
| Neutrophils     | #      | +       | +       | -       | -        | +        | -       | #    |
| Eosinophils     | #      | +       | +       | -       | -        | #        | -       | #    |
| Basophils       | #      | +       | +       | -       | -        | +/-      | -       | #    |
| Monocytes       | +      | +       | +       | -       | +/-      | -        | -       | #    |
| Macrophages     | +/-    | +       | +       | -       | +/-      | -        | +/-     | #    |
| Dendritic cells | -/#    | +       | +       | -       | -/#      | -        | +       | -    |
| Platelets       | -      | +       | -       | -       | -        | -        | -       | -    |

+ Constitutive expression

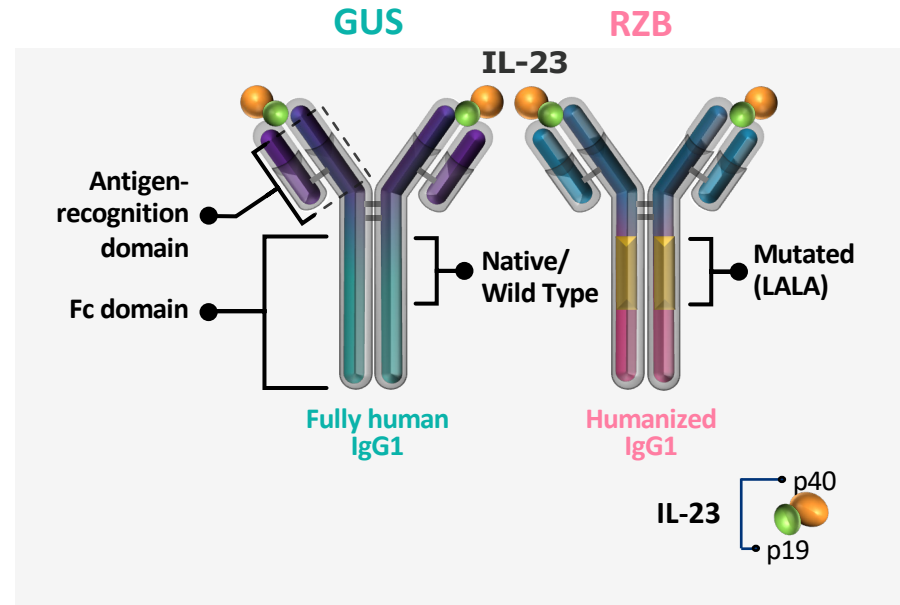
- No expression

# Inducible expression

- Fcγ receptors: surface receptors on immune cells that recognize the Fc portion of IgG
- CD64 (FcγRI) is the only Fcγ receptor with high affinity for IgG1

# Clinically Relevant Differences Between Anti-IL-23 Therapeutic Antibodies May Be Related to Their Unique Molecular Attributes

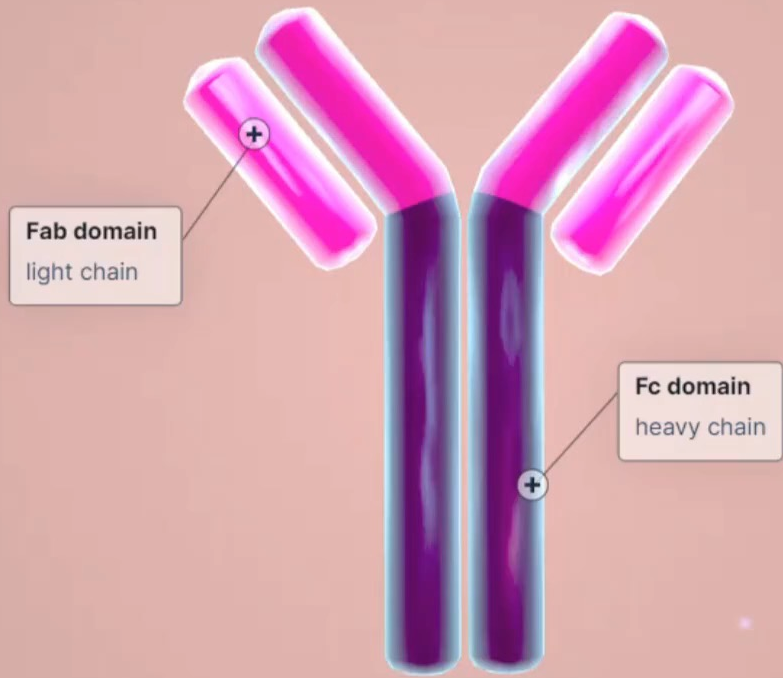
- ▶ Guselkumab (GUS) and risankizumab (RZB) are mAbs that selectively target the p19 subunit of IL-23<sup>1,2</sup>
- ▶ GUS and RZB have shown efficacy in the treatment of inflammatory bowel diseases<sup>3-6\*</sup>
- ▶ Potential differences in the therapeutic profiles may be related to their unique molecular attributes<sup>7-9</sup>
- ▶ GUS and RZB have differences in the Fc region that affect binding to Fc-gamma receptors<sup>1,2</sup>



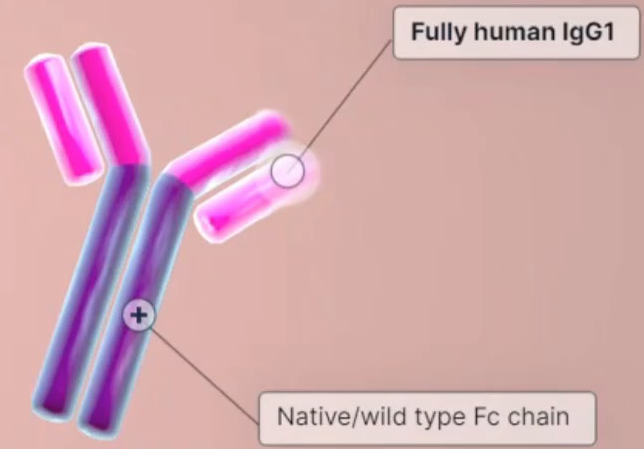
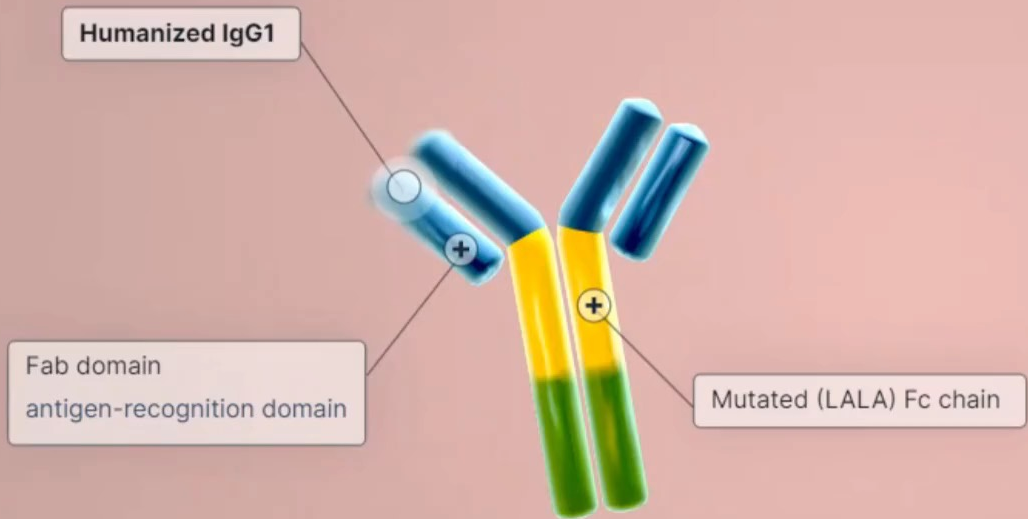
mAb = monoclonal antibody; Fc = fragment crystallizable; LALA = leucine to alanine substitutions at positions 234 and 235; IgG = immunoglobulin G.

\*GUS is approved for adult patients with moderate-to-severe plaque psoriasis and active psoriatic arthritis. RZB is approved for adult patients with moderate-to-severe plaque psoriasis, active psoriatic arthritis, and moderately to severely active Crohn's disease.

1. D'Haens G, et al. *Lancet*. 2022;399(10340):2015-2030. 2. Ferrante M, et al. *Lancet*. 2022;399(10340):2031-2046. 3. Sandborn WJ, et al. *Gastroenterology*. 2022;162(6):1650-1664. 4. Dignass A, et al. *J Crohns Colitis*. 2022;16(suppl 1):i025-i026. 5. Louis E, et al. *Aliment Pharmacol Ther*. 2004;19(5):511-519. 6. Vos AC, et al. *Gastroenterology*. 2011;140(1):221-230. 7. Wojtal KA, et al. *PLoS One*. 2012;7(8):e43361.

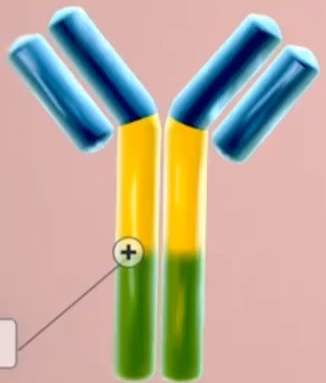




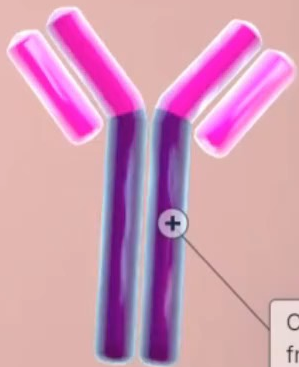


**IL-23**  
p40 subunit

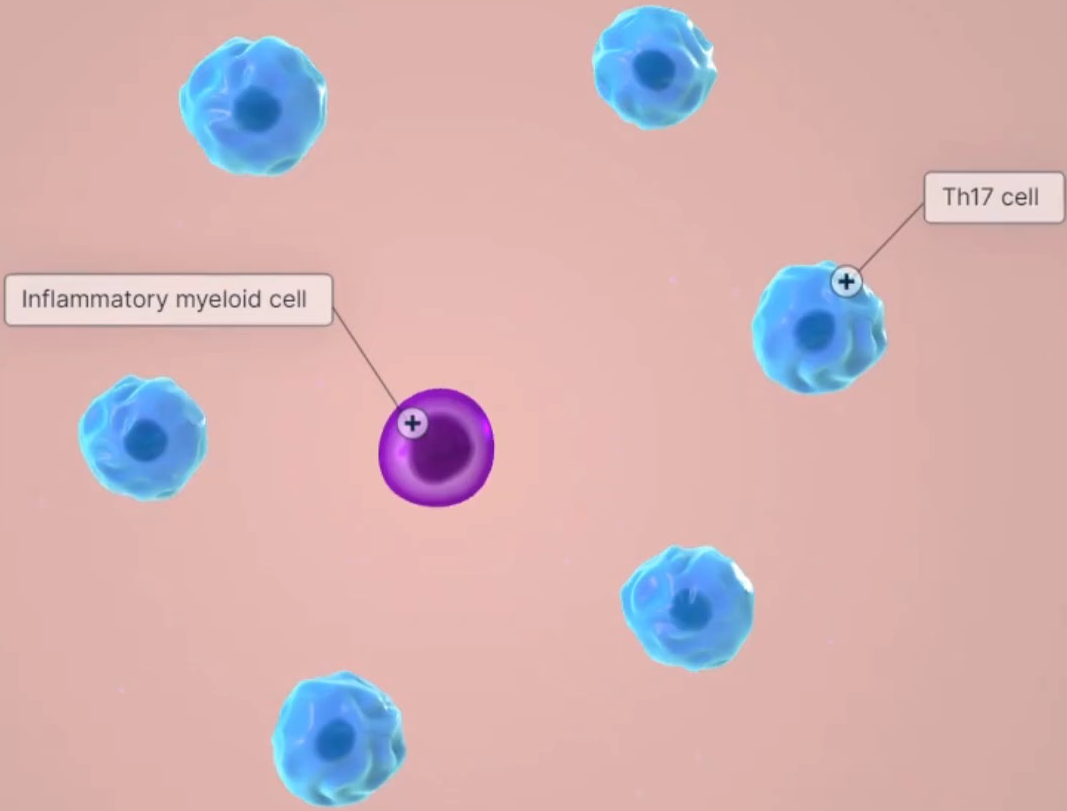
**IL-23**  
p19 subunit



Mutated (LALA) antibody



Contains native/wild type Fc fragment

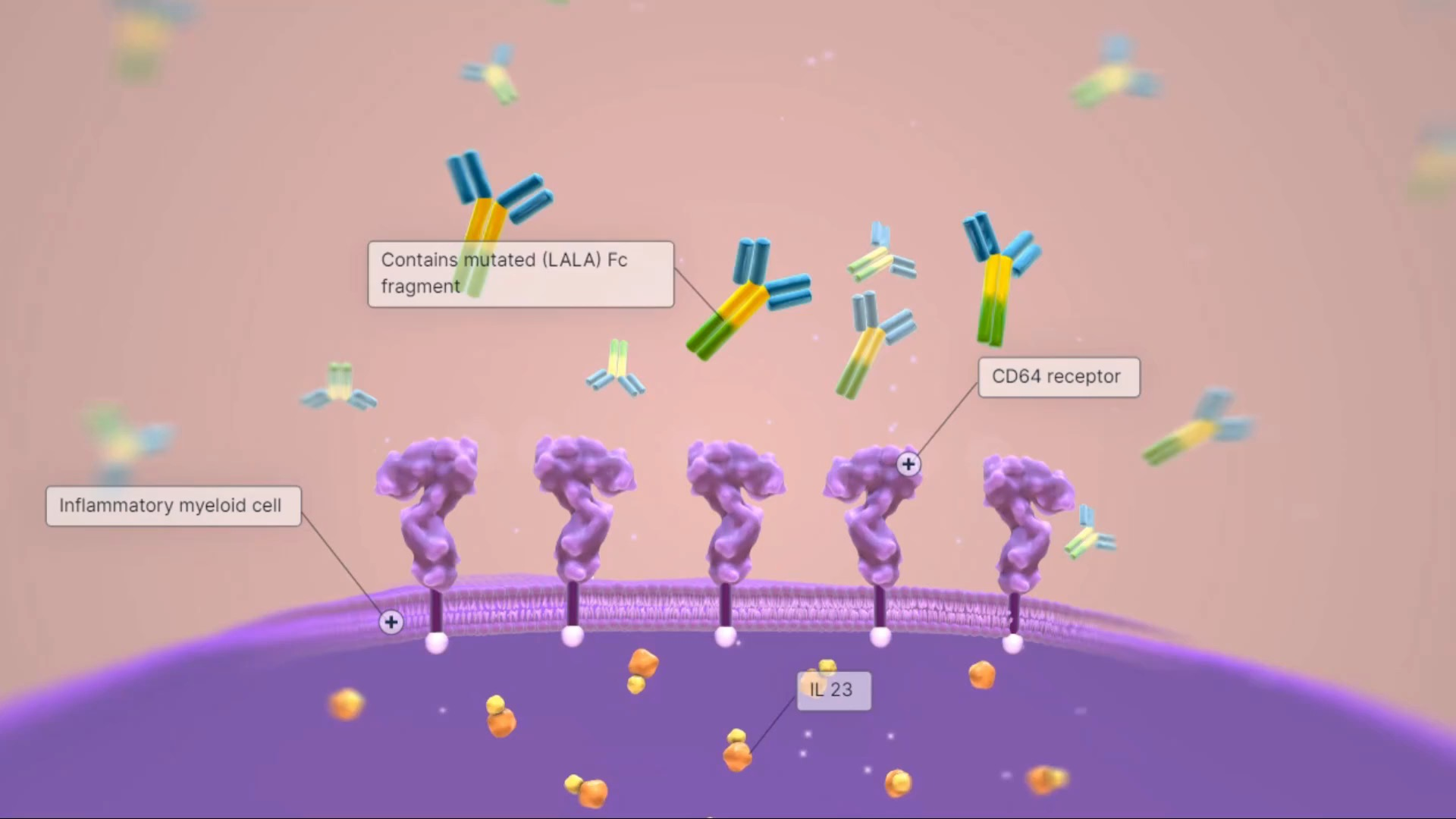


Contains mutated (LALA) Fc fragment

CD64 receptor

Inflammatory myeloid cell

IL 23

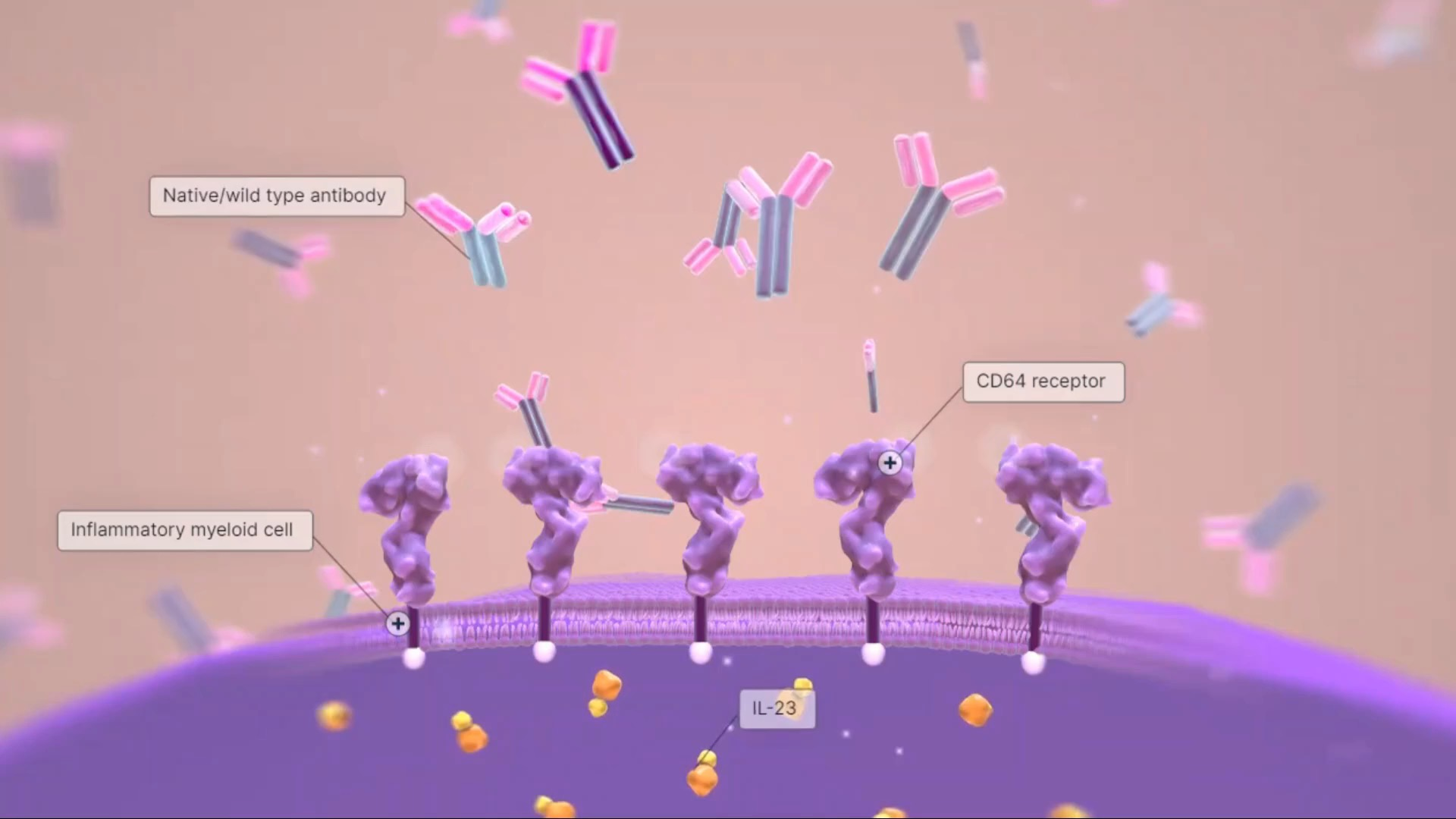


Native/wild type antibody

CD64 receptor

Inflammatory myeloid cell

IL-23



# Audience Response

Which of the following was found in the MODIF-Y study when comparing binding affinity of guselkumab and risankizumab to CD64 receptors?

- A. Binding of both guselkumab and risankizumab to CD64
- B. Binding of guselkumab only to CD64
- C. Binding of risankizumab only to CD64
- D. I don't know

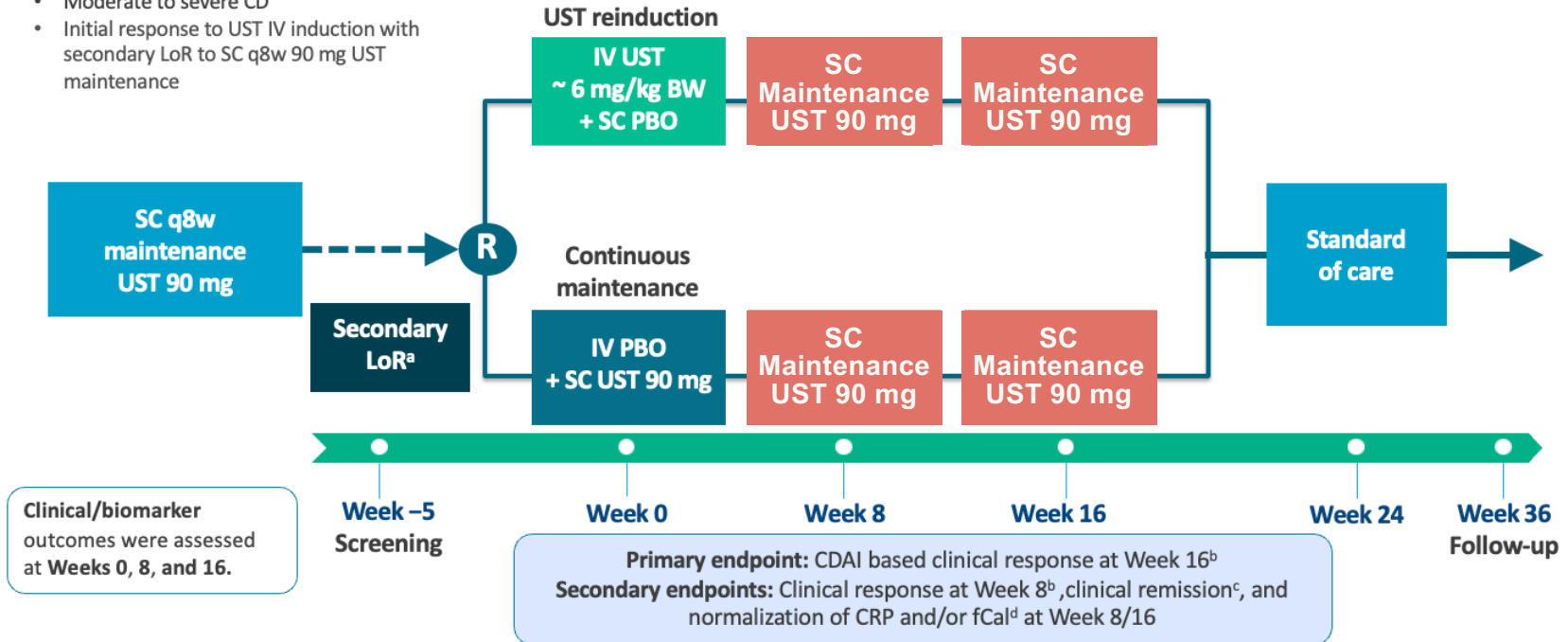


**How will we optimize IL-23  
targeting agents? How can we  
consider rational combination  
therapies?**

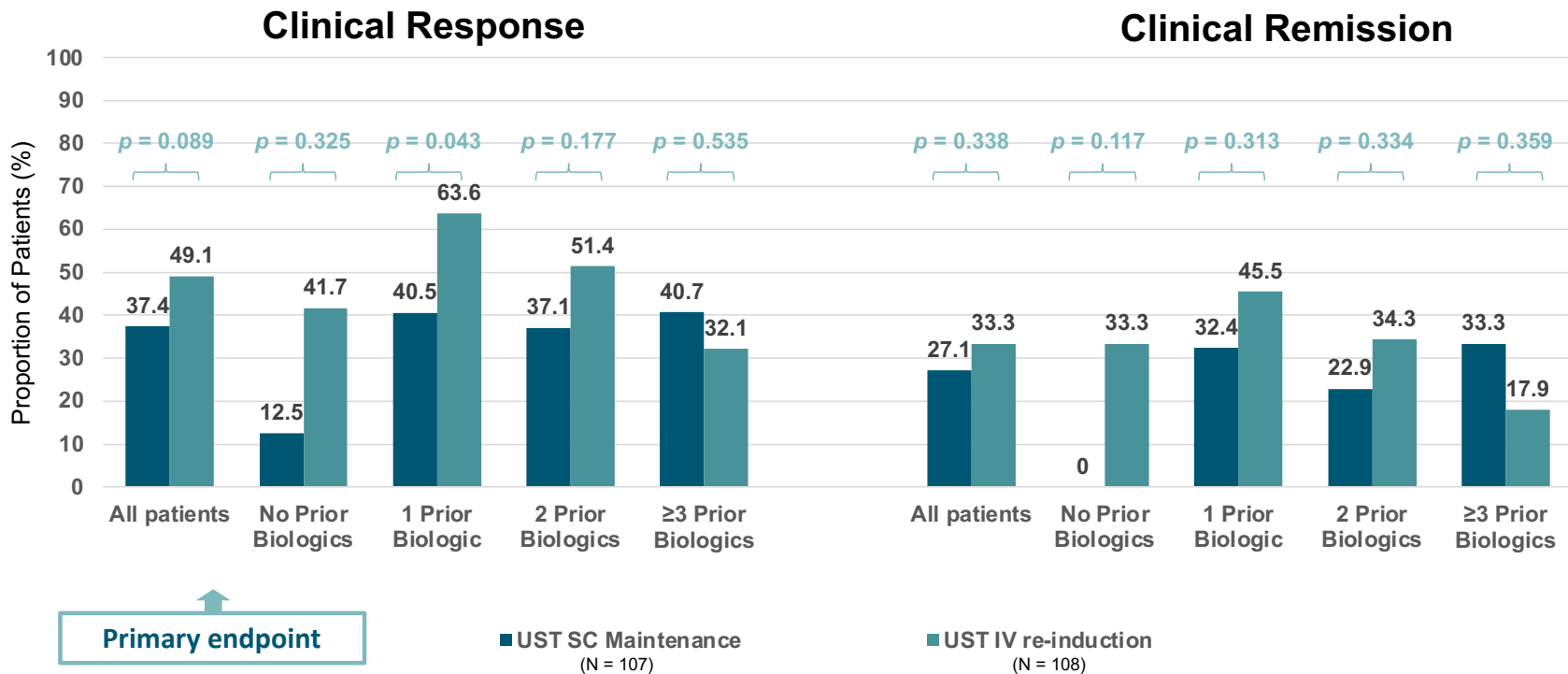
# POWER Study: Phase IIb Ustekinumab in CD

## Study population

- Moderate to severe CD
- Initial response to UST IV induction with secondary LoR to SC q8w 90 mg UST maintenance

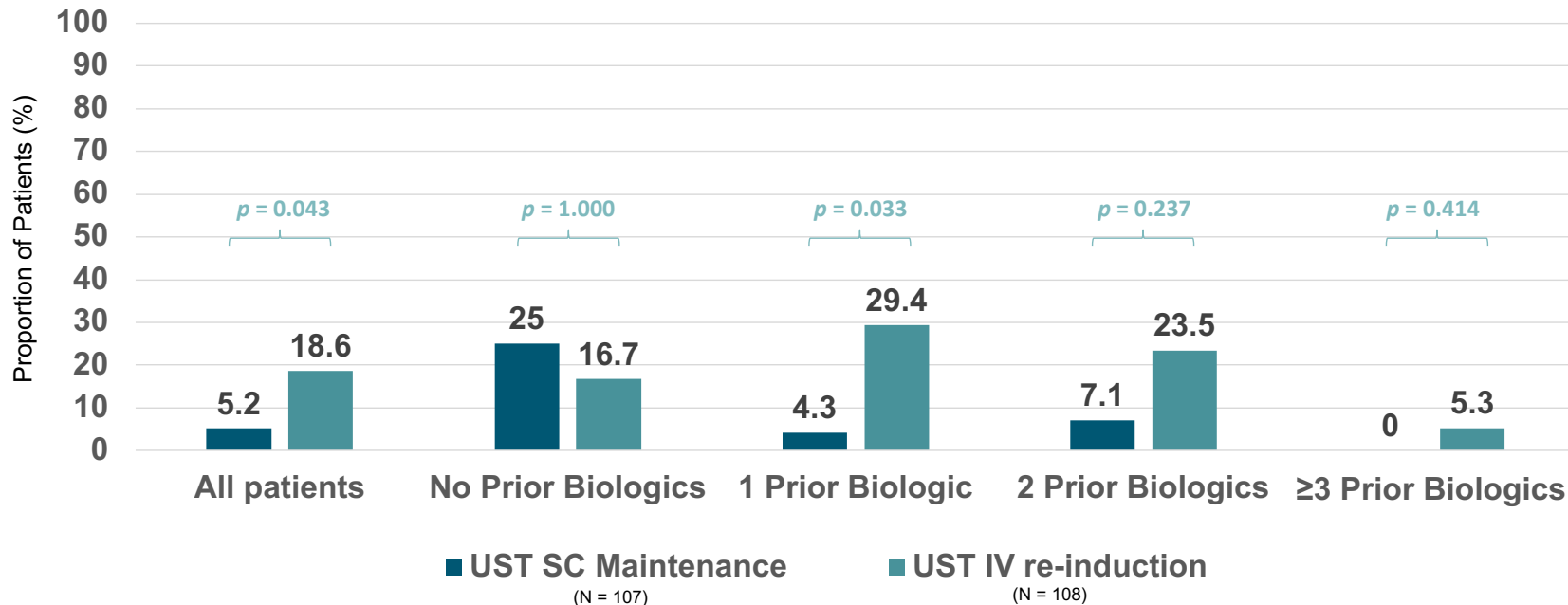


# POWER Study: Clinical Response and Remission at Wk16 Based on Number of Prior Failed Biologics



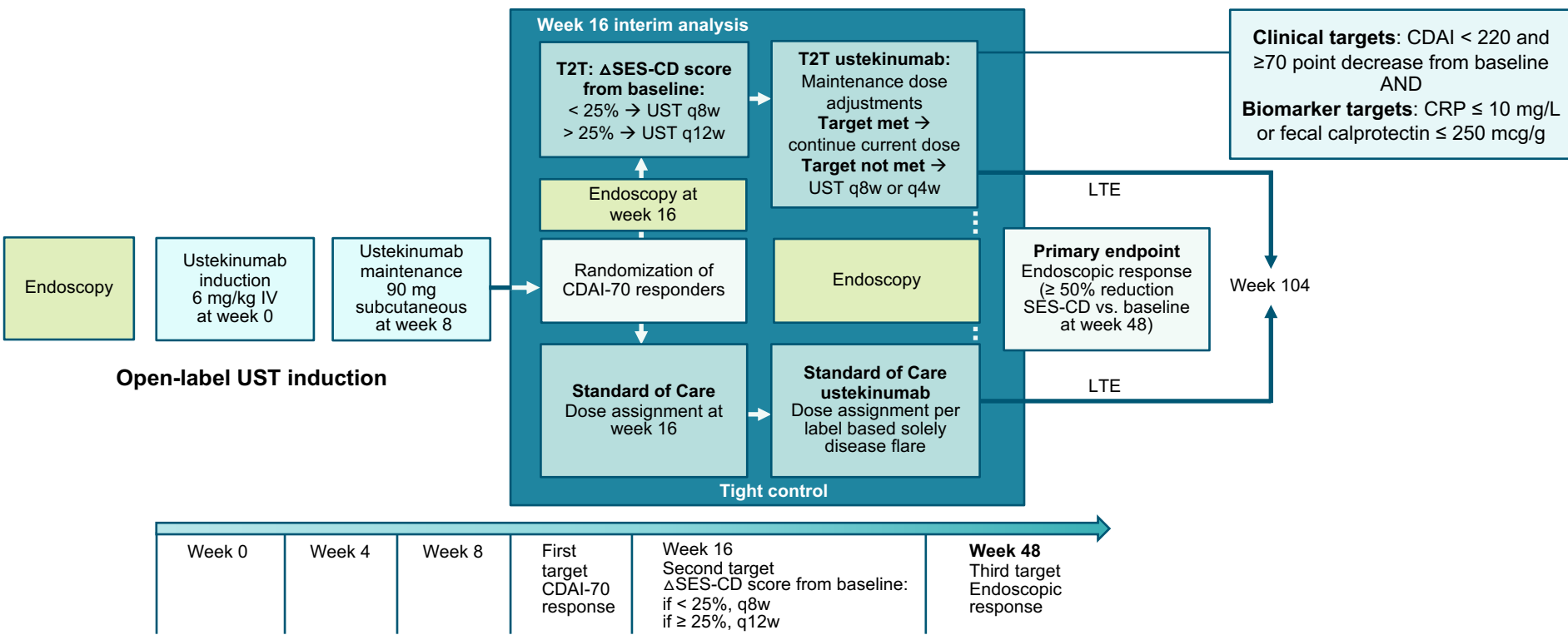
Clinical response was defined as a CDAI < 150 or a decrease of ≥ 100 points from Week 0. Schreiber S, et al. United European Gastroenterology Week. 2023. Abstract No. OP216.

# POWER Study: Endoscopic Remission at Wk16 Based on Number of Prior Failed Biologics



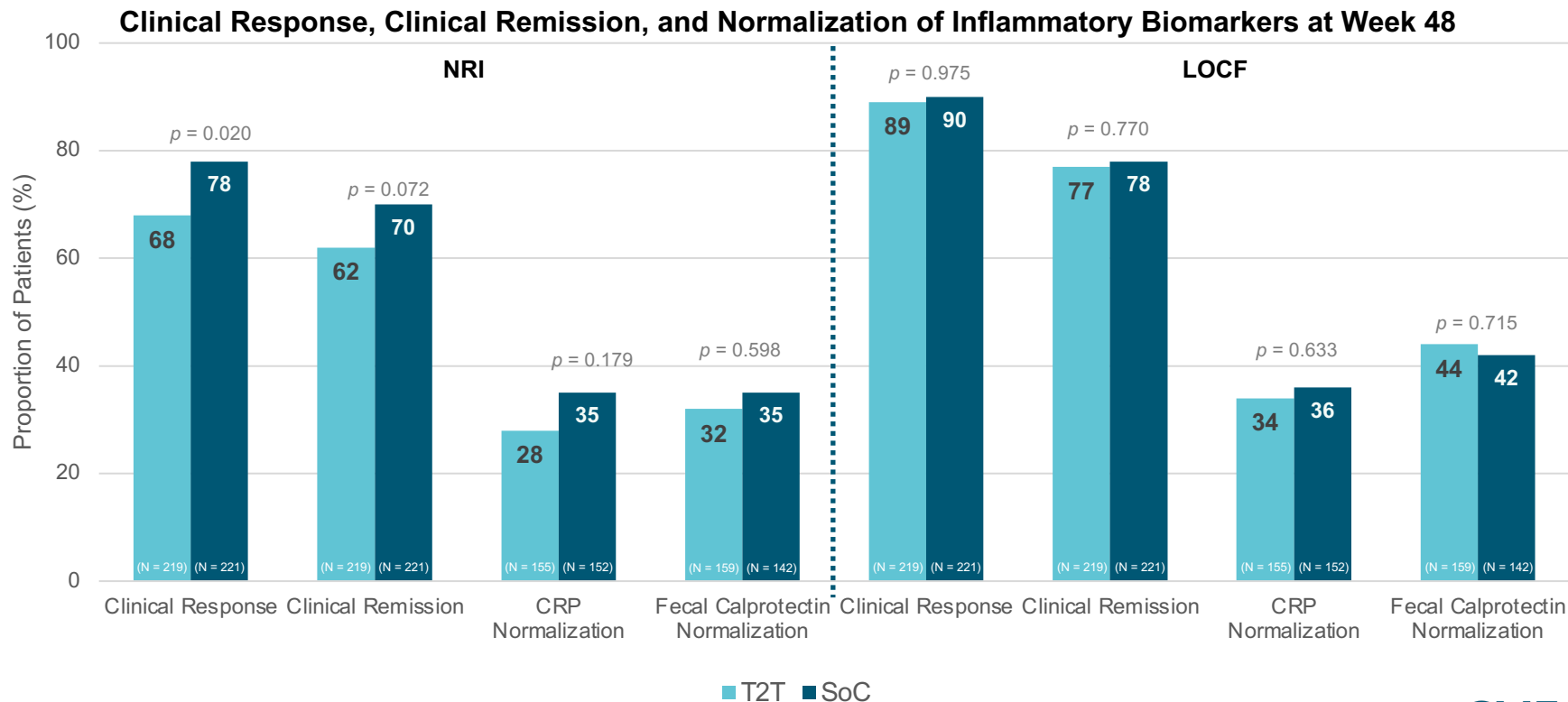
Endoscopic remission is defined as SES-CD score  $\leq 3$  or SES-CD = 0 for subjects who entered the study with a SES-CD = 3. Schreiber S, et al. United European Gastroenterology Week. 2023. Abstract No. OP216.

# STARDUST: Ustekinumab in CD with T2T Versus SoC Strategy



CRP = C-reactive protein; LTE = long-term extension; SES-CD = simple endoscopic score in Crohn's disease; SoC = standard of care; T2T = treat-to-target. Danese S, et al. *Lancet Gastroenterol Hepatol.* 2022;7(4):294-306.

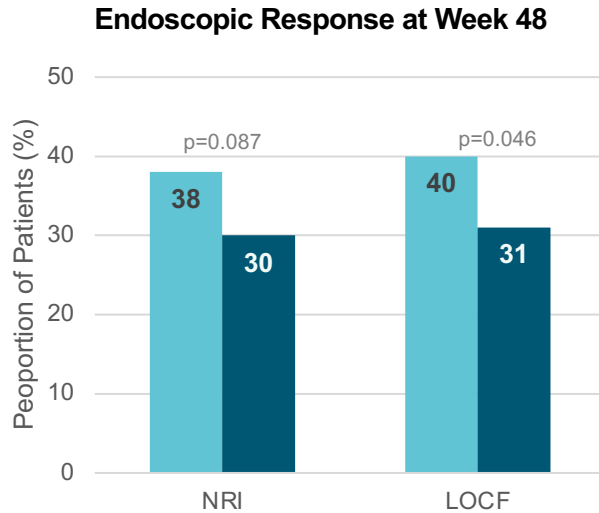
# STARDUST: Ustekinumab in CD with T2T Versus SoC Strategy



LOCF = last observation carried forward; NRI = non-responder imputation  
Danese S, et al. *Lancet Gastroenterol Hepatol.* 2022;7(4):294-306.

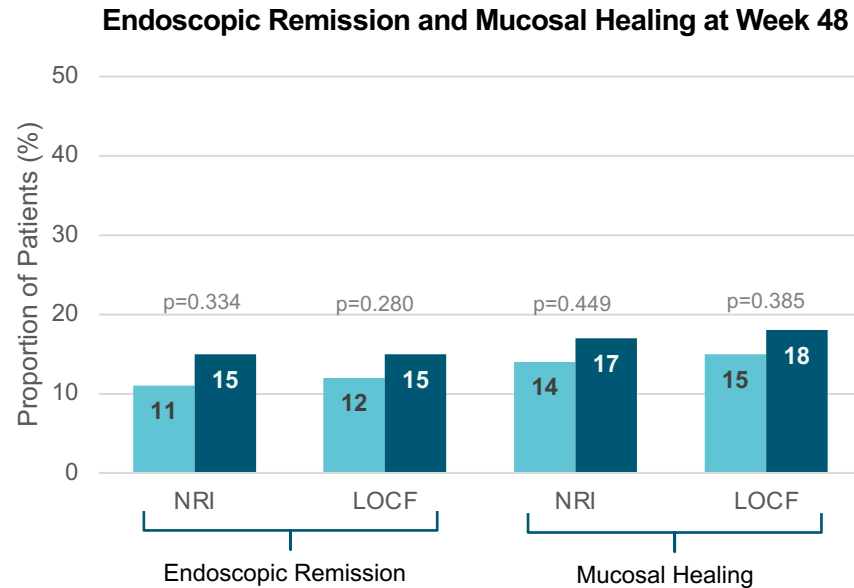


# STARDUST: Endoscopic Outcomes at 48 Weeks



T2T group n=219

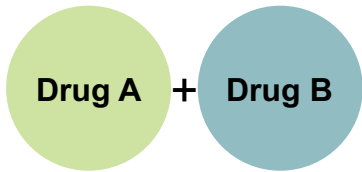
Standard-of-care group n=221



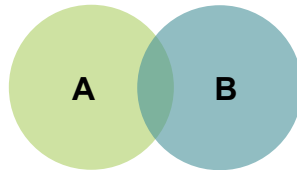
- Dose escalation rates: 42% in T2T group and 30% in standard of care (SoC) group
- Shortened dosing intervals → increased UST trough levels but did not significantly increase endoscopic or clinical response at week 48
- Non-significant difference in rate of endoscopic response between T2T and SoC groups

# Considerations for Combination Therapy

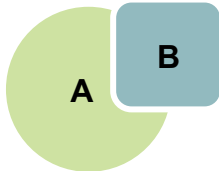
Independent MOAs



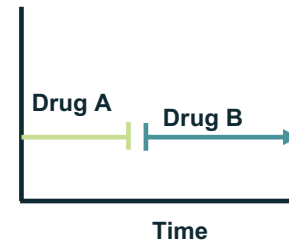
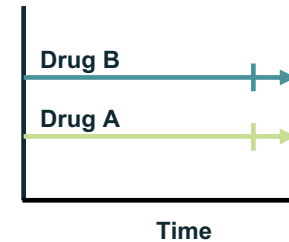
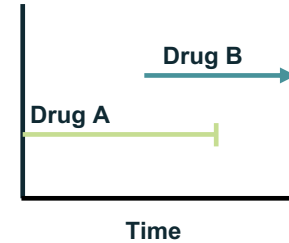
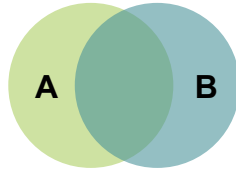
Medium activity overlap/crosstalk



Complementary MOAs



High activity overlap/crosstalk

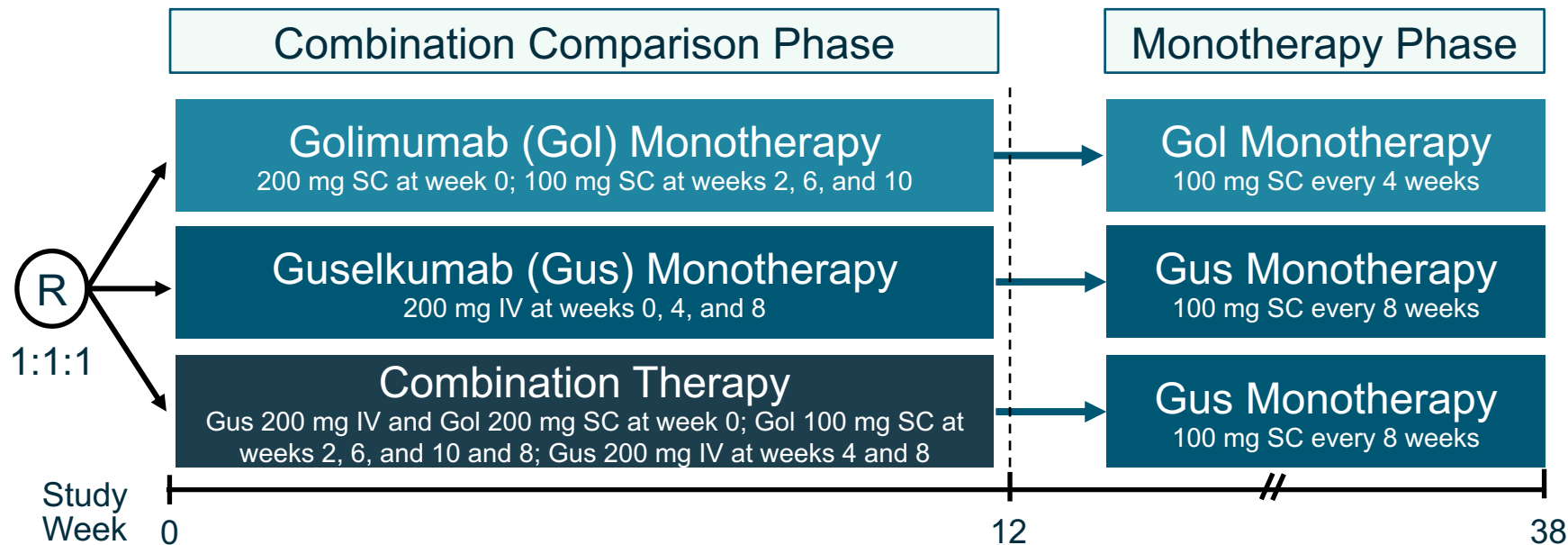


# Advanced Combination Therapy

- ▶ Anti-IL-23 + anti-TNF
  - ▶ VEGA
  - ▶ DUET-CD
  - ▶ DUET-UC
- ▶ Anti-integrin + anti-TNF + methotrexate
  - ▶ EXPLORER

# VEGA: Golimumab, Guselkumab\*, or Combination Therapy in UC

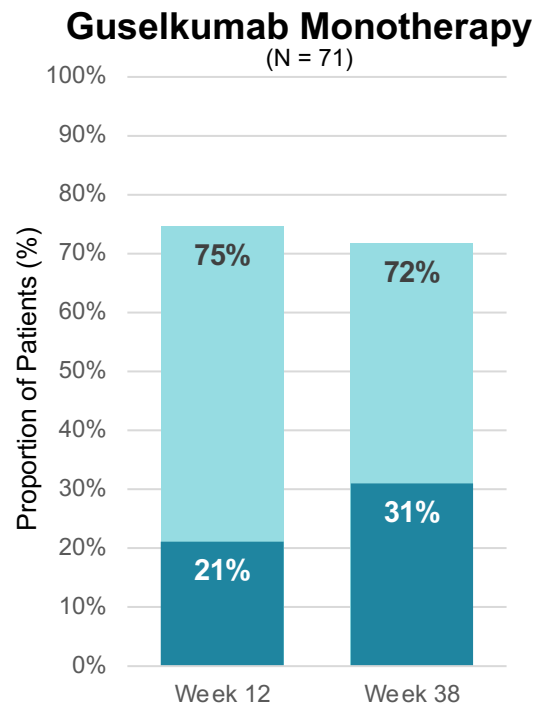
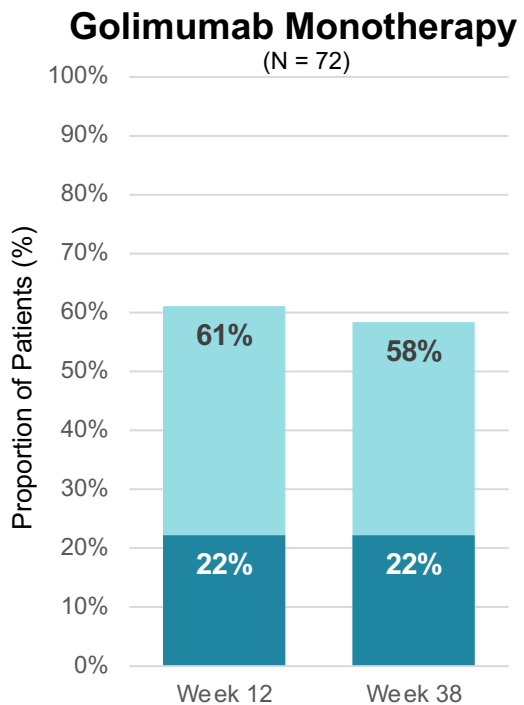
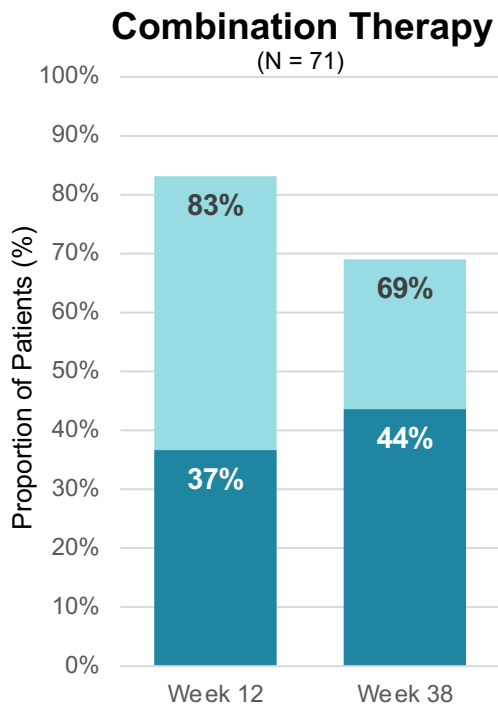
- ▶ Included TNF-naïve patients refractory to conventional therapy (e.g., immunomodulators, corticosteroids)



\*Guselkumab is not FDA-approved for the treatment of UC.

Feagan BG, et al. *Lancet Gastroenterol Hepatol.* 2023;8(4):307-320.

# VEGA: Golimumab, Guselkumab\*, or Combination Therapy in UC



■ Clinical response (full Mayo score) ■ Clinical remission (full Mayo score)

\*Guselkumab is not FDA-approved for the treatment of UC.  
Feagan BG, et al. *Lancet Gastroenterol Hepatol*. 2023;8(4):307-320.

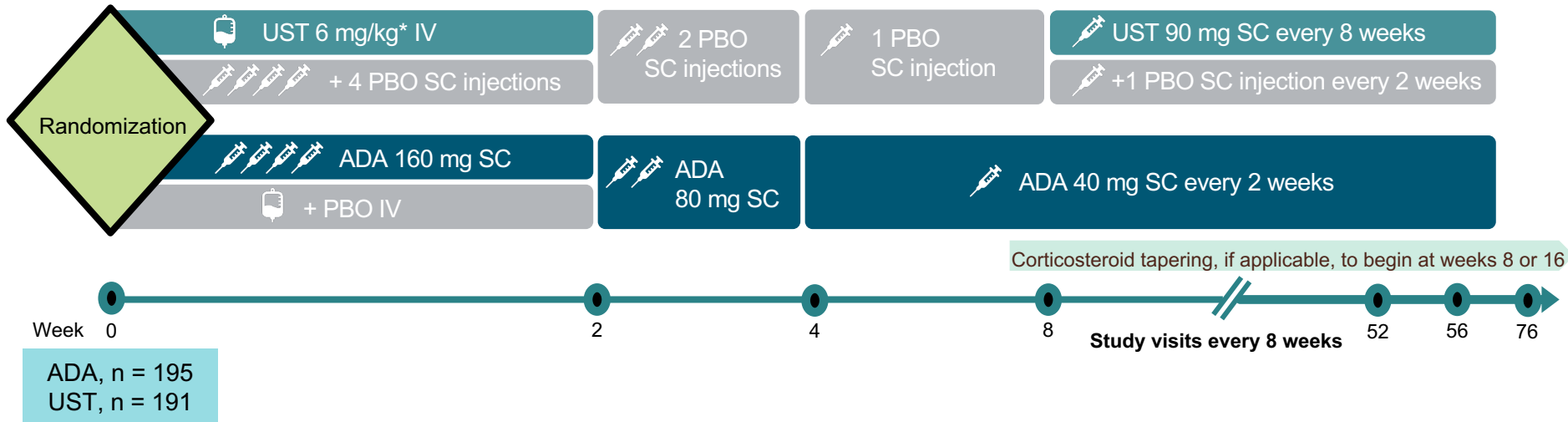
# What do we know about positioning IL-23 targeted therapies?



Faculty Discussion

# SEAVUE: Adalimumab vs Ustekinumab in CD

- Multicenter, randomized, blinded, active-controlled study
- Biologic-naïve patients failing or intolerant to conventional therapy with an ulcer of any size on baseline ileocolonoscopy



ADA = adalimumab.

\*UST 260 mg (weight ≤ 55 kg); UST 390 mg (weight > 55 kg and ≤ 85 kg); UST 520 mg (weight > 85 kg)

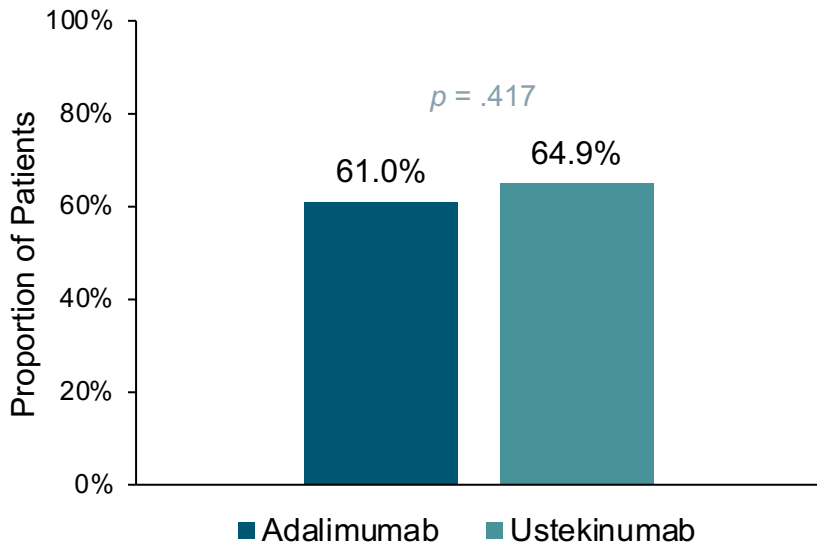
Sands B, et al. *Lancet*. 2022;399(10342):2200-2211.



# SEAVUE: Adalimumab vs. Ustekinumab in CD

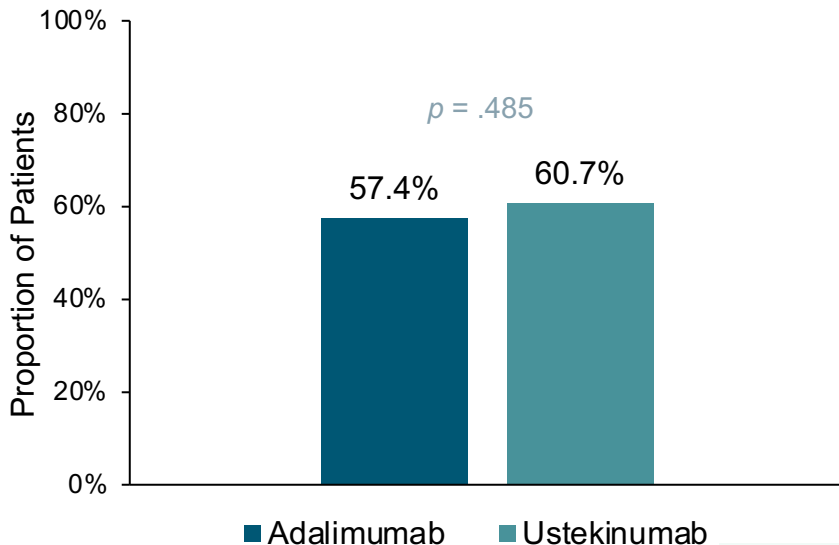
## Primary Endpoint<sup>a,b</sup>

Clinical Remission (CDAI < 150) at Week 52



## Major Secondary Endpoint<sup>a,b,c</sup>

Corticosteroid-Free Clinical Remission at Week 52



ADA, n = 195  
UST, n = 191

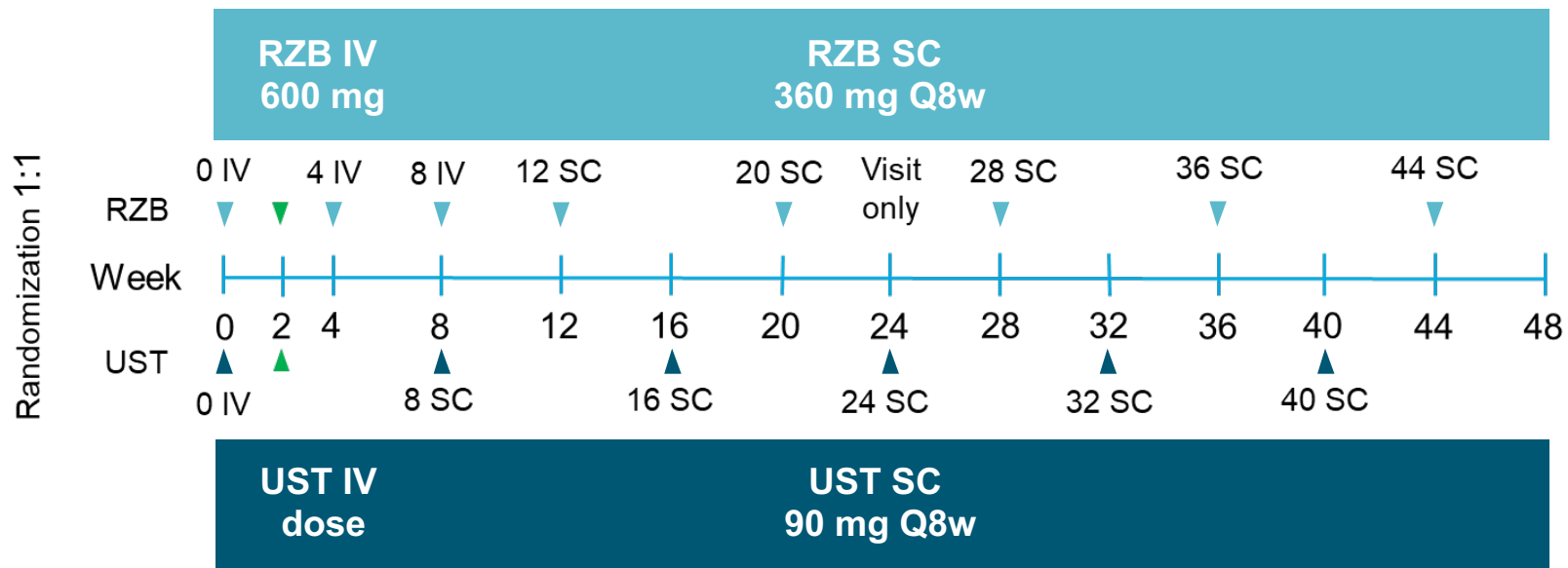
NOTE: not receiving corticosteroids at week 52 is defined as corticosteroid free for  $\geq 30$  days prior to week 52

<sup>a</sup>Patients who had CD-related surgery, concomitant medication changes, or discontinued study agent due to lack of efficacy or an adverse event considered not to be in clinical remission. <sup>b</sup>Insufficient data to calculate the CDAI score= not to be in clinical remission. <sup>c</sup>Last value carried forward for patients with missing information related to corticosteroid use. <sup>d</sup>CIs based on the Wald statistic with Mantel-Haenszel weight.

Sands BE, et al. *Lancet*. 2022;399(10342):2200-2211.

# SEQUENCE: Risankizumab vs Ustekinumab Head-to-Head RCT

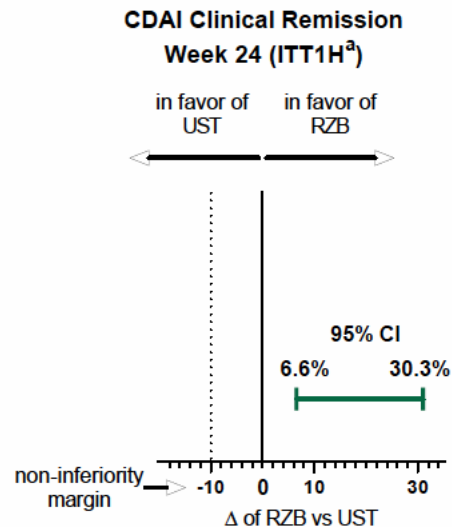
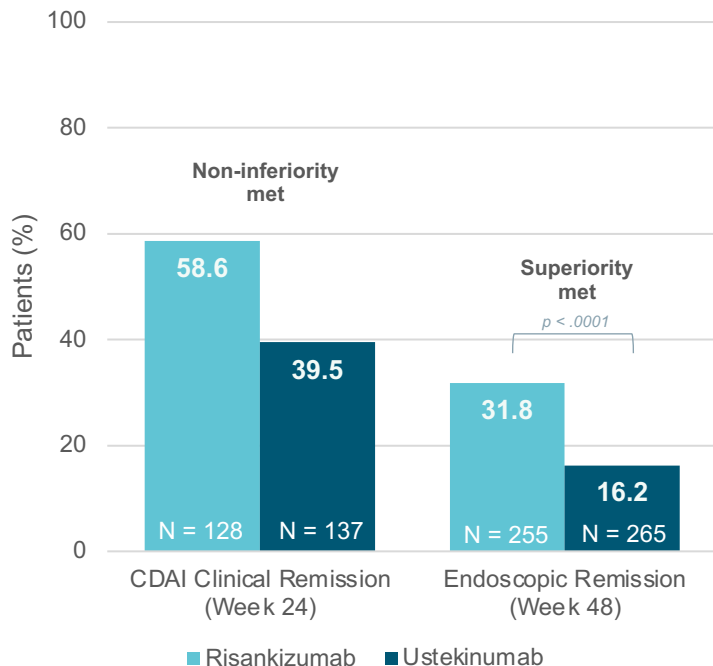
## SEQUENCE



# SEQUENCE: Risankizumab vs Ustekinumab Head-to-Head RCT



## Risankizumab vs Ustekinumab



**CDAI clinical remission:** CDAI < 150

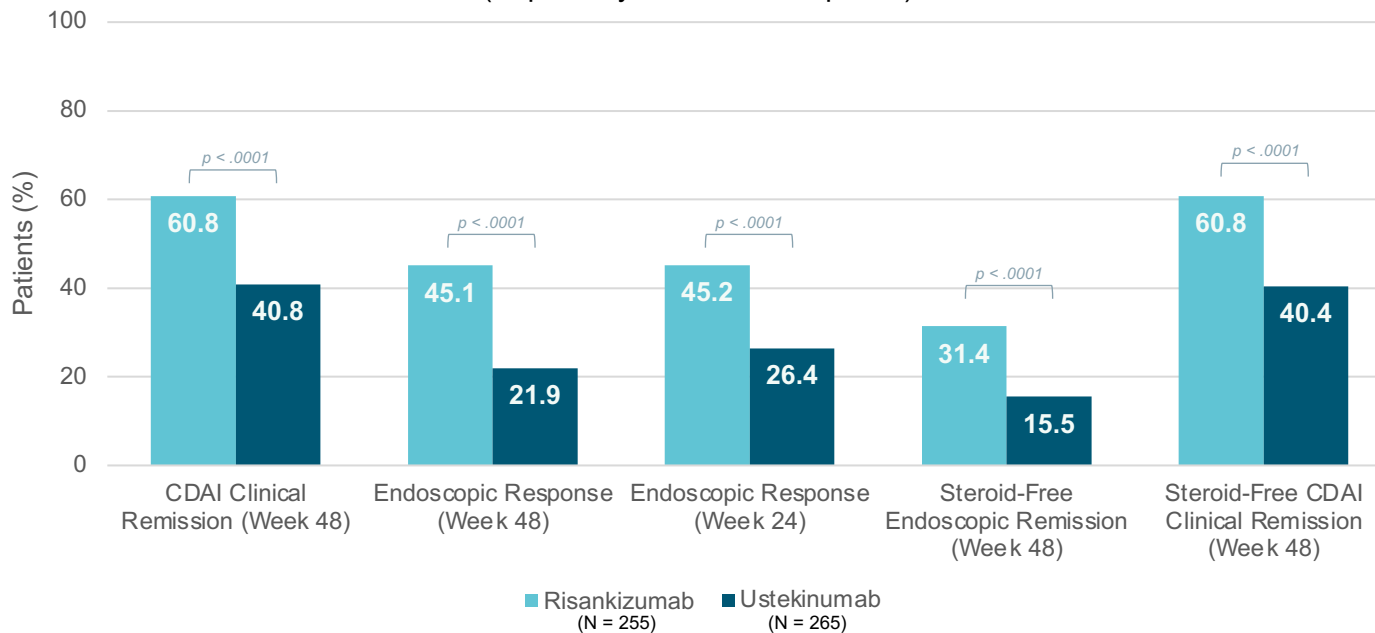
**Endoscopic remission:** SES-CD  $\leq 4$  and at least a 2-point reduction vs BL and no subscore > 1 in any individual variable, as scored by a central reviewer

# SEQUENCE: Risankizumab vs Ustekinumab Head-to-Head RCT



## Ranked Secondary Endpoints (ITT1a)

(Superiority met for all endpoints)



CDAI clinical remission = CDAI < 150; Endoscopic response = decrease in SES-CD > 50% from BL (or for subjects with isolated ileal disease and a baseline SES-CD of 4, at least a 2-point reduction from BL; Endoscopic remission = SES-CD ≤ 4 and at least a 2-point reduction from BL and no subscore > 1 in any individual variable.

Peyrin-Biroulet L, et al. United European Gastroenterology Week. 2023. Abstract No. LB01.

# SMART Goals

## Specific, Measurable, Attainable, Relevant, Timely

- ▶ Consider the underlying mechanisms behind the inflammatory pathways implicated in IBD, such as those impacting IL-23 and Th17 pathways, when considering treatment options
- ▶ Differentiate between IL-23 targeting therapies and their unique characteristics to individualize and optimize patient treatment
- ▶ Increase utilization of clinical data from treatments targeting IL-23 when developing treatment plans for patients with IBD



# QUESTIONS & ANSWERS

Thank you for joining us.  
Don't forget to collect your credit.



# Additional Resources

To learn more,  
engage with this  
interactive 3D  
digital animation.

Scan the QR code and  
click on the “Material”  
tab to access.





**CME**  
OUTFITTERS



*Visit the*  
**Gastroenterology Hub**

Free resources and education for  
health care professionals and patients  
on IBD

<https://www.cmeoutfitters.com/gastrohub/>

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attendance:

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activity, scan the QR code to  
create an account.



## To Receive Credit

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Click on the *Request Credit tab* to complete the process and access your certificate.