

# HLA-DQA1\*05 Variant

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- The 2020 PANTS study found that the HLA variant *HLA-DQA1\*05* is associated with production of antibodies against infliximab and adalimumab<sup>1</sup>
  - This result was not confirmed in a subsequent study<sup>2</sup>
  - A separate study found no correlation between *HLA-DQA1\*05* and anti-TNF- $\alpha$  primary or secondary nonresponse<sup>3</sup>
- *HLA-DQA1\*05* not associated with clinical response to ustekinumab or vedolizumab<sup>4</sup>

HLA, human leukocyte antigen; PANTS, Personalising Anti-TNF Therapy in Crohn's Disease.

1. Sazonovs A, et al. *Gastroenterology*. 2020;158(1):189-99; 2. Spencer EA, et al. *Gastroenterology*. 2022;162(6):1746-48.e3; 3. Pascual-Oliver A, et al. *Inflamm Bowel Dis*. 2023;izad130; 4. Navajas Hernández P, et al. *Rev Esp Enferm Dig*. 2023;10.17235/reed.2023.9491/2023

# Genetic and Molecular Markers of Drug Efficacy

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- Genetics and gene expression
  - Multiple genes involved with cytokines and their receptors and immunoglobulin receptors alter response to anti-TNF- $\alpha$  in UC and CD<sup>1,2</sup>
  - *NUDT15* and *TPMT* associated with thiopurine-induced leukopenia<sup>3</sup>
- Proteomics – serum levels of numerous proteins are associated with IBD and:<sup>1</sup>
  - Clinical remission
  - Therapeutic response
  - Serum CRP levels
- Gut microbiome – baseline bacterial levels in CD correlate with treatment response to infliximab and vedolizumab<sup>2,4</sup>
- Currently limited practical application in clinical practice
  - Insufficient data to establish clear connection
  - Testing can be prohibitively expensive or time-consuming

CRP, C-reactive protein.

1. Elhag DA, et al. *Int J Mol Sci.* 2022;23(13):6966; 2. Marafini I, et al. *Front Pharmacol.* 2021;12:653924; 3. Barnes EL, et al. *Gastroenterology.* 2021;160(3):677-89; 4. Mah C, et al. *Pathogens.* 2023;12(2):262.