

# PRODUCT INFORMATION

## Citrullinated Collagen Type II Monoclonal Antibody (Clone ACC1)

Item No. 39295

### Overview and Properties

|                            |                                                                                                                                                                                                                                                                                 |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Contents:</b>           | This vial contains 200 µg of protein A-affinity purified monoclonal antibody.                                                                                                                                                                                                   |
| <b>Synonyms:</b>           | Alpha-1 Type II Collagen, Collagen Alpha-1(II) Chain                                                                                                                                                                                                                            |
| <b>Immunogen:</b>          | Bovine collagen type IIA                                                                                                                                                                                                                                                        |
| <b>Cross Reactivity:</b>   | (+) Citrullinated form of the triple helical collagen type II C1 epitope (amino acids 359-369), denatured collagen type II, denatured collagen type II triple helical C1 epitope (amino acids 359-369). Some cross reactivity to non-citrullinated epitopes on collagen type II |
| <b>Species Reactivity:</b> | (+) Human, mouse, bovine                                                                                                                                                                                                                                                        |
| <b>Form:</b>               | Liquid                                                                                                                                                                                                                                                                          |
| <b>Storage:</b>            | -20°C (as supplied)                                                                                                                                                                                                                                                             |
| <b>Stability:</b>          | ≥6 months                                                                                                                                                                                                                                                                       |
| <b>Storage Buffer:</b>     | PBS with 0.02% Proclin™ 300                                                                                                                                                                                                                                                     |
| <b>Clone:</b>              | ACC1                                                                                                                                                                                                                                                                            |
| <b>Host:</b>               | Mouse                                                                                                                                                                                                                                                                           |
| <b>Isotype:</b>            | IgG2a                                                                                                                                                                                                                                                                           |
| <b>Applications:</b>       | ELISA and Immunohistochemistry (IHC); the optimal working concentration/dilution should be determined empirically.                                                                                                                                                              |

### Description

Collagen type II is a fibril-forming heterodimeric protein present in cartilage, cartilaginous zones of tendons, and intervertebral discs that is subject to citrullination by peptidyl arginine deiminase 2 (PAD2) and PAD4.<sup>1,2</sup> Citrullinated collagen type II and autoantibodies to citrullinated collagen type II have been found in synovial fluid isolated from patients with rheumatoid arthritis, with autoantibodies appearing years prior to clinical disease onset.<sup>2-4</sup> Anti-citrullinated collagen type II antibodies induce proteoglycan depletion of cartilage and arthritis in mice.<sup>4,5</sup> Cayman's Citrullinated Collagen Type II Monoclonal Antibody (Clone ACC1) was produced recombinantly from the sequence of the original anti-citrullinated collagen type II monoclonal antibody, ACC1, and can be used for ELISA and immunohistochemistry (IHC) applications. The ACC1 antibody was generated by immunizing mice with bovine collagen type II.<sup>5</sup>

### References

1. Sorushanova, A., Delgado, L.M., Wu, Z., *et al.* The collagen suprafamily: From biosynthesis to advanced biomaterial development. *Adv. Mater.* **31(1)**, e1801651 (2019).
2. Foulquier, C., Sebbag, M., Clavel, C., *et al.* Peptidyl arginine deiminase type 2 (PAD-2) and PAD-4 but not PAD-1, PAD-3, and PAD-6 are expressed in rheumatoid arthritis synovium in close association with tissue inflammation. *Arthritis Rheum.* **56(11)**, 3541-3553 (2007).
3. Uysal, H., Nandakumar, K.S., Kessel, C., *et al.* Antibodies to citrullinated proteins: Molecular interactions and arthritogenicity. *Immunol. Rev.* **233(1)**, 9-33 (2009).
4. Ge, C., Tong, D., Liang, B., *et al.* Anti-citrullinated protein antibodies cause arthritis by cross-reactivity to joint cartilage. *JCI Insight* **2(13)**, e93688 (2017).
5. Uysal, H., Bockermann, R., Nandakumar, K.S., *et al.* Structure and pathogenicity of antibodies specific for citrullinated collagen type II in experimental arthritis. *J. Exp. Med.* **206(2)**, 449-462 (2009).

**WARNING**  
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

**SAFETY DATA**  
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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