Product Data Sheet

Rabbit Anti-Carbamyl-Lysine (CBL) Polyclonal Antibody

CATALOG NUMBER: STA-078 **STORAGE:** -20ºC

QUANTITY AND CONCENTRATION: 50 µg of affinity purified antibody at 0.5 mg/mL in 75 mM Sodium phosphate, 75 mM NaCl, pH 7.2, 0.5 mM EDTA and 0.02% NaN_3

SHELF LIFE: 1 year from date of receipt under proper storage conditions; aliquot to avoid multiple freeze thaw cycles

HOST SPECIES: Rabbit

IMMUNOGEN: CBL-KLH

SPECIFICITY: CBL-modified proteins

APPLICATION: Immunoblot (1:200 to 1:20,000)
ELISA (1:200 to 1:20,000)

Background

Carbamylation is a post-translational modification which occurs throughout the lifespan of proteins *in vivo*. Carbamylation results from the binding of isocyanic acid, spontaneously derived from high concentrations of urea and leading to the formation of carbamyl-lysine (CBL). The carbamylation of proteins is usually associated with a partial or complete loss of protein function. It is known that elevated urea directly induces the formation of potentially atherogenic carbamylated LDL (cLDL). High blood concentrations of urea leading to the carbamylation process were detected in uremic patients and patients with end-stage renal disease.

Recent Product Citations

1. Kim, T.S. et al. (2023). Neutrophil extracellular traps and extracellular histones potentiate IL-17 inflammation in periodontitis. *J Exp Med*. **220**(9):e20221751. doi: 10.1084/jem.20221751.
2. O'Neil, L.J. et al. (2020). Neutrophil-mediated carbamylation promotes articular damage in rheumatoid arthritis. *Sci Adv*. **6**(44):eabd2688. doi: 10.1126/sciadv.abd2688.
3. Lee, Y.H. et al. (2020). Localisation of citrullinated and carbamylated proteins in inflamed gingival tissues from rheumatoid arthritis patients. *Clin Oral Investig*. doi: 10.1007/s00784-020-03452-9.
4. Lubbers, R. et al. (2019). Carbamylation reduces the capacity of IgG for hexamerisation and complement activation. *Clin Exp Immunol*. doi: 10.1111/cei.13411.
5. Verheul, M.K. et al. (2018). Pitfalls in the detection of citrullination and carbamylation. *Autoimmun Rev*. **17**(2):136-141. doi: 10.1016/j.autrev.2017.11.017.

6. Kluve-Beckerman, B. et al. (2016). Carbamylation of the amino-terminal residue (Gly1) of mouse serum amyloid A (SAA) promotes amyloid formation in a cell culture model. *FEBS Lett*. doi:10.1002/1873-3468.12472.
7. Skopelja, S. et al. (2016). The role for neutrophil extracellular traps in cystic fibrosis autoimmunity. *JCI Insight* **1**:e88912.
8. Challener, G. J. et al. (2016). Anti-carbamylated protein antibody levels correlate with anti-Sa (Citrullinated Vimentin) antibody levels in rheumatoid arthritis. *J Rheumatol*. **43**:273-81.
9. Bright, R. et al. (2015). Is there a link between carbamylation and citrullination in Periodontal Disease and Rheumatoid Arthritis?. *Med Hypotheses.* doi: 10.1016/j.mehy.2015.03.006.
10. Koro, C. et al. (2014). Carbamylation of immunoglobulin abrogates activation of the classical complement pathway. *Eur J Immunol.* **44**:3403-3412.

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