

# MICROVUE™

## MicroVue™ YKL-40

Delivering a high quality tool for research  
in rheumatology, fibrosis and cancer<sup>1</sup>

**For Research Use Only. Not for use in Diagnostic Procedures.**

YKL-40, a member of the mammalian chitinase-like protein class, is a 40 kDa heparin-binding glycoprotein.<sup>2</sup> It shares amino acid sequence homology to non-mammalian chitinases but demonstrates no chitinase activity. The name YKL-40 is derived from the protein's molecular weight and three N-terminus amino acids (tyrosine, lysine and leucine). The gene for YKL-40 has been identified (CHI3L1, located on chromosome 1q31-q32)<sup>3</sup> and its structure has been described, but the protein's site and mode of binding to cell surface receptors remains unknown.

The biological function of YKL-40 remains largely unknown.<sup>3</sup> YKL-40 has been shown to be a potent growth factor for connective tissue cells and a potent migration factor for endothelial cells. While YKL-40 is not significantly expressed in normal tissues, several studies have demonstrated substantial levels of YKL-40 expression (mRNA and protein) in environments with inflammation or

where substantial remodeling of the extracellular matrix (ECM) occurs.<sup>1</sup>

### Areas of Research

Elevated serum YKL-40 levels are also found in patients with active rheumatoid arthritis, inflammatory bowel diseases, severe bacterial infections and liver fibrosis. It has also been detected in Bronchial Alveolar Lavage (BAL) fluid in patients with severe asthma.<sup>4</sup>

Research has also demonstrated that YKL-40 is expressed in several types of cancer. These include cancer of the breast, colon, lung, prostate and brain (Glioblastoma Multiforme).<sup>5</sup> Although increased levels have been shown in these diseases, the role of YKL-40 remains unknown.

### MicroVue YKL-40

The MicroVue YKL-40 Assay is a quantitative Enzyme Linked Immunosorbent Assay (ELISA) developed to aid investigators in finding solutions to the challenges posed by these disease states. MicroVue YKL-40 is designed for ease of use and high specificity with a total assay time of approximately 3.5 hours.

### Performance

#### Sensitivity

- ▶ LLOQ: 15.6 ng/mL
- ▶ HLOQ: 300 ng/mL
- ▶ LOD: 5.4 ng/mL

#### Specificity

- ▶ 100% YKL-40/HC gp-39

#### Excellent Reproducibility

- ▶ Inter and Intra assay CV ≤ 7%

#### Sample volume

- ▶ Undiluted sample, 20 µL

### Species cross reactivity

- ▶ Baboon, Rhesus, Cynomolgus Macaque and Human

### Product information

- ▶ Sandwich ELISA
- ▶ 96-well format
- ▶ 40 tests/kit (in duplicate)
- ▶ For use with experimental samples including human plasma and serum, synovial fluid, conditioned cell culture media and tumor extracts
- ▶ Cat.# 8020

### Related Products

Monoclonal Anti-YKL-40	4813
Polyclonal Anti-YKL-40	4815
YKL-40 Protein	A442

### References:

- 1 Johansen, J. Studies on serum YKL-40 as a biomarker in disease with inflammation, tissue remodeling, fibroses and cancer. Dan Med Bull 53:172-209, 2006.
- 2 Harvey, S., Weisman, M., O'Dell, J., Scott, T., Krusemeier, M., Visor, J., and Swindlehurst, C. Chondrex: New Marker of Joint Disease. Clin. Chem. 44:509-516, 1998.
- 3 Mohanty A.K., Singh, G., Paramasivam, M., Saravanan, K., Jabeen, T., Sharma, S., Yadav, S., Kaur, P., Kumar, P., Srinivasan, A., Singh, TP. Crystal Structure of a Novel Regulatory 40 kDa Mammary Gland Protein (MGP-40) Secreted During Involution. J Biol Chem 2003: 278:14451-60.
- 4 Chupp, G. A Chitinase-like Protein in the Lung and Circulation of Patients with Severe Asthma. Anonymous. Anonymous. N. Engl. J. Med. 357:2016-2027, 2007.

- 5 Johansen, J., and Johansen, J. Changes of Biochemical Markers of Bone Turnover and YKL-40 Following Hormonal Treatment for Metastatic Prostate Cancer Are Related to Survival. Anonymous. Anonymous. Clin. Cancer Res 13:3244-3249, 2007.

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### Additional Information

To learn more about YKL-40 or other Quidel products visit our website at [www.quidel.com](http://www.quidel.com) or contact our Technical Services at 1.800.524.6318, 1.408.616.4301 or via fax at 1.408.616.4310.