

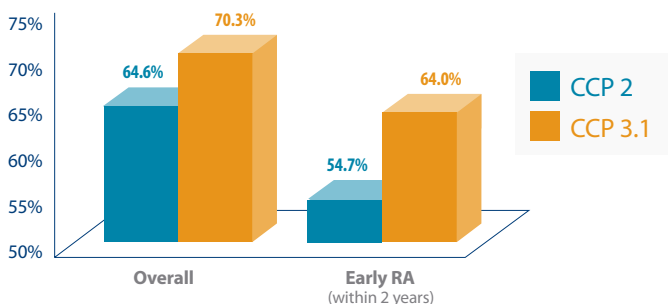
# RHEUMATOID ARTHRITIS TESTING WITH BETTER PERFORMANCE

## Third-generation anti-CCP 3.1 test and 14-3-3 eta provides improved sensitivity and can aid in early diagnosis of rheumatoid arthritis (RA)<sup>1,2</sup>

### Anti-CCP 3.1 Clinical Utility

- Anti-cyclic citrullinated peptide (Anti-CCP) is commonly used along with rheumatoid factor (RF) to diagnose rheumatoid arthritis (RA).
  - Anti-CCP, when used in combination with RF, provides greater sensitivity than RF alone.<sup>3</sup>
  - Anti-CCP 3.1 offers greater sensitivity than earlier CCP tests and has been shown to correctly identify 83% of RA patients who were found to be RF negative.<sup>1</sup>
- Anti-CCP (also called anti-citrullinated protein antibody [ACPA]) is now included in Rheumatoid Arthritis Classification Criteria for RA diagnosis.<sup>4</sup>
- Assessment of anti-CCP antibodies has been shown to identify patients who are more likely to develop joint damage, including a significant number of patients without RF.<sup>3,5,6</sup>
- Anti-CCP 3.1 is the first assay approved for early detection of RA
  - Improved detection within 2 years of onset<sup>7</sup>

### CCP 3.1 Offers Increased Clinical Sensitivity over CCP 2<sup>7</sup>



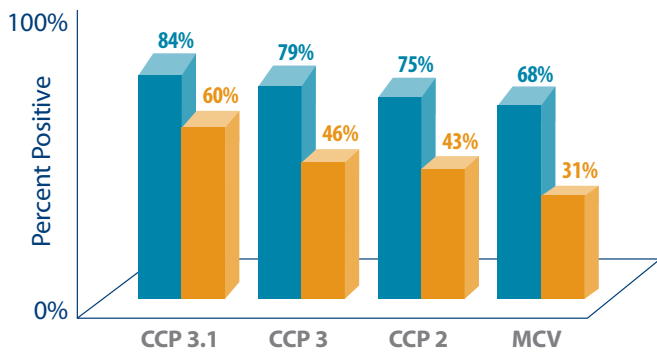
### Anti-CCP 3.1 Scientific Excellence

- Anti-CCP 3.1 offers a sensitivity of 70.3% and a specificity of 97.8%.<sup>7</sup>
- Enhanced sensitivity is achieved by utilizing both IgG and IgA antibodies.<sup>7</sup>
  - Prior assays only detected IgG antibodies.
- Use of multiple citrullinated epitopes improves early RA detection by increasing the likelihood for a corresponding antibody reaction.

### 14-3-3 eta

The 14-3-3 eta protein is a joint-derived, proinflammatory mediator that is implicated in the joint erosion process and pathogenesis of RA.<sup>8</sup>

- Positive serum 14-3-3 eta levels are associated with higher rates of joint damage as measured by radiographic assessments using the Sharp/van der Heijde Score.<sup>2,8</sup>
- Serum testing shows that 14-3-3 eta is elevated in both early and established RA.<sup>8</sup>
- 14-3-3 eta is highly specific for RA. Serum 14-3-3 eta may be especially helpful in identifying patients with early RA, as it provides a 15% incremental benefit to the diagnostic sensitivity of markers including, Rheumatoid Arthritis (RA) Factor and Cyclic Citrullinated Peptide (CCP) Antibodies.<sup>2</sup>
- A higher level of 14-3-3η also helps to identify RA patients who are most likely to exhibit rapid progression and need earlier, tailored therapy.<sup>2</sup>



### Test Seropositivity Comparison<sup>9\*</sup>

■ Total RA cohort  
■ RF-negative population

\*Based on Szekanecz Z, Szabó Z, Zeher M, et al. Superior performance of the CCP3.1 test compared to CCP2 and MCV in the rheumatoid factor-negative RA population. *Immunol Res.* 2013 Jul;56(2-3):439-43.

## Superior Service

- Comprehensive services for the rheumatology specialist
- Extensive list of managed care health plans
- Flexible connectivity options for test ordering and result reporting
- Nationwide network of locations for specimen collection
- Local account representation

Test No	Test Name
<b>504550</b>	14.3.3 eta, Rheumatoid Arthritis
<b>164914</b>	Cyclic Citrullinated Peptide (CCP 3.1) Antibodies, IgG/IgA, ELISA
<b>504509</b>	RheumAssure™ Profile includes: Anti-CCP 3.1 Rheumatoid Arthritis (RA) Factor 14.3.3 eta
<b>006502</b>	Rheumatoid Arthritis (RA) Factor
<b>164065</b>	Rheumatoid Arthritis Profile Profile Includes: Anti-CCP 3.1 Rheumatoid Factor (RA) Factor

## References

1. Szabo Z, Soós L, Lakos G, Sipka S, Szekanecz. Performance of third generation anti-CCP assays. Poster presented at: Controversies in Rheumatology and Autoimmunity (CDRA); March 10-12, 2011; Florence, Italy.
2. Carrier N, Marotta M, de Brum-Fernandes A, Liang P, Masetto A, Menard HA, et al. Serum levels of 14-3-3η protein supplement C-reactive protein and rheumatoid arthritis-associated antibodies to predict clinical and radiographic outcomes in a prospective cohort of patients with recent-onset inflammatory polyarthritis. *Arthritis Research & Therapy.* 2016; 18(37) 1-14.
3. Vallbracht I, Rieber J, Oppermann M, Förger F, Siebert U, Helmke K. Diagnostic and clinical value of anti-cyclic citrullinated peptide antibodies compared with rheumatoid factor isotypes in rheumatoid arthritis. *Ann Rheum Dis.* 2004;63:1079-1084.
4. Aletaha D, Neogi T, Silman AJ et al. 2010 Rheumatoid arthritis classification criteria: an American College of Rheumatology/European League Against Rheumatism collaborative initiative. *Ann Rheum Dis.* 2010;69:1580-1588.
5. Pruijin GJM, Vossenaar ER, Drijfhout JW, van Venrooij WJ, Zendman JW. Anti-CCP antibody detection facilitates early diagnosis and prognosis of rheumatoid arthritis. *Curr Rheum Rev.* 2005;1:1-7.
6. Niewold TB, Harrison MJ, Paget SA. Anti-CCP antibody testing as a diagnostic and prognostic tool in rheumatoid arthritis. *O J Med.* 2007;100:193-201.
7. QUANTA Lite™ CCP 3.1 IgG/IgA ELISA [directional insert]. INOVA Diagnostics, Inc; October 2009. Revision 2.
8. Maksymowych WP, van der Heijde D, Allaart CF, Landewe R, Boire G, Tak PP, et al. 14-3-3eta is a novel mediator associated with the pathogenesis of rheumatoid arthritis and joint damage *Arthritis Res. Ther.*, 16 (2014), p. R99.
9. Szekanecz Z, Szabó Z, Zeher M, et al. Superior performance of the CCP3.1 test compared to CCP2 and MCV in the rheumatoid factor-negative RA population. *Immunol Res.* 2013 Jul;56(2-3):439-43.



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