

Renin, Direct Assay to Replace Plasma Renin Activity

Tests at Dearborn, Grosse Pointe, Farmington, Royal Oak, Taylor, Trenton, Troy, Wayne

Effective Date: February 7, 2017

Effective immediately, the Plasma Renin Activity assay at Warde Medical Laboratory will be replaced by the Direct Renin assay. According to a recent Endocrine Society Practice Guideline both assays are approved for clinical use, however the sole manufacturer of the FDA-approved plasma renin activity assay has discontinued manufacturing of the kit.

The determination of renin is useful for the investigation of primary and secondary aldosteronism. The direct renin assay can be used alone or in combination with aldosterone to obtain an aldosterone to renin ratio (1). An aldosterone/direct renin ratio of >3.0 , according to one study (2) has a sensitivity of 90% and a specificity of 100%. Alternatively, when the direct renin concentration is less than 12.6 pg/mL and the aldosterone concentration is greater than 15.0 ng/dL, the sensitivity and specificity is 98%.(3).

Advantages of the direct method are:

1. Improved low end sensitivity
2. Improved between lab standardization as this method is calibrated against the WHO IS 68/356 standard.
3. Less interference from hemolysis. With the renin activity assay, any hemolysis was unacceptable, but mild to moderate is acceptable with the new direct renin assay.
4. When used with the aldosterone to screen for primary aldosteronism, fewer false positives. (2)

Specimen collection and processing remain unchanged (Two lavender-top EDTA tubes, centrifuge, separate plasma from cells and freeze plasma immediately).

References:

1. Funder JW, Carey RM, et.al., Endocrine Society Practice Guideline, JCEM, (2016) 101 (5): 1889-1916
2. Lonati G, Bassani N, et.al., Measurement of plasma renin concentration instead of plasma renin activity decreases the positive aldosterone-to-renin ratio tests in treated patients with essential hypertension. J. Hypertens 2014 Mar,32 (3): 627-34.
3. Valcour A, Soldo J, et al., Analytical Performance of Immunoassays in a Suspect Primary Aldosteronism Population. Poster presentation, ICE/ENDO 2014; June 21-24 in Chicago, IL, USA.

See reverse for reference ranges

Beaumont Laboratory

Customer Service

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Laboratory Bulletin

Reference Range:

Renin, Direct – New Test

Adults

3.1-57.1 pg/mL

Renin Activity – Old Test

Adults

Normal Sodium Diet

Supine: <3.4 ng/mL/hr

Upright: <5.3 ng/mL/hr

Adults

Restricted Salt Intake

Sodium Excretion (mEq/24 hr)	PRA (ng/mL/hr)
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0-30	1.3-31.4
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30-75	2.3-9.6
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75-150	0.8-3.5
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>150	<1.8
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Children

Normal Sodium Diet

<1 years old: <15.0 ng/mL/hr

1-5 years old: <10.0 ng/mL/hr

5-15 years old: <6.0 ng/mL/hr

If you have questions, please contact Client Services (1-800-551-0488, option 5).

Date submitted: January 30, 2016

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