Pacific Biomarkers
The Value of Expertise

DHEA-S (Dehydroepiandrosterone Sulfate)

Analyte: Dehydroepiandrosterone Sulfate

Specimen Type: Serum

Optimum Volume: 0.5 mL

Stability:

2-8 Degrees C	-20 Degrees C	-70 Degrees C
2 days	2 months	10 years

Reporting Units: ug/dL

Method: Chemiluminescence

Biological or Clinical Significance:

Measurement of dehydroepiandrosterone sulfate (DHEA-SO4), an adrenal steroid, is used in investigations of abnormal hair growth (hirsutism) and balding (alopecia) in women. It is also employed in the assessment of adrenarche and delayed puberty. Circulating DHEA-SO4 originates almost entirely from the adrenals.

Plasma levels of DHEA-SO4 increase steadily from about the seventh year of life then gradually decline after the third decade. DHEA-SO4 is secreted into the bloodstream at a rate only somewhat greater than DHEA, but because of its much slower turnover (DHEA-SO4 has a half-life of nearly a full day) a plasma level that is almost a thousand fold higher is maintained. Unlike cortisol, DHEA-SO4 does not exhibit significant diurnal variation. Unlike testosterone, it does not circulate bound to sex hormone-binding globulin and hence is not influenced by alterations in the level of this carrier protein. Its abundance, together with its within-day and day-to-day stability, makes it an excellent direct indicator of adrenal androgen output, generally superior to the measurement of urinary 17-ketosteroids in this context.

Accordingly, DHEA-SO4 is often assayed in conjunction with free testosterone as an initial screen for hyperandrogenism in hirsutism.

In addition, it has recently been shown that DHEA-SO4 levels correlate with the degree of atherosclerosis in postmenopausal women with diabetes.

Elevated plasma DHEA-SO4 levels that, over the course of approximately two weeks, are dexamethasone-suppressible may also result from adrenal hyperplasia.

Principle of Test Method:

The DHEA-SO4 assay is an automated competitive immunoassay using electrochemiluminescent detection.

References:

1. Orentreich N, Brind JL, Rizer RL, Vogelman JH. Age changes and sex differences in serum dehydroepiandrosterone sulfate concentrations throughout adulthood. J Clin Endocrinol Metab 1984; 59:551-555.

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