

DPPIV Activity

Analyte: DPPIV Activity

Specimen Type: EDTA Plasma

Optimum Volume: 0.5 mL

2-8°C **-20°C** **-70°C**

Unstable* N.A.* N.A.*

Reporting units: U/L

Method: Enzymatic

Biological or Clinical Significance:

DPP-IV (dipeptidyl peptidase-4, DPP-IV, CD26) plays a major role in glucose metabolism. It is a member of the class of proteases called prolyl peptidases, which cleave proteins after proline residues. It is responsible for the degradation of incretins such as GLP-1. Furthermore, it appears to work as a suppressor in the development of cancer and tumors CD26/DPP-IV plays an important role in tumor biology, and is useful as a marker for various cancers, with its levels either on the cell surface or in the serum increased in some neoplasms and decreased in others.

DPP-IV/CD26 plays an important role in many biological and pathological processes. It functions as T cell activating molecule (THAM). It serves as a cofactor for entry of HIV in CD4+ cells. It binds adenosine deaminase, the deficiency of which causes severe combined immunodeficiency disease in humans. It cleaves chemokines such as stromal cell derived factor 1 α and macrophage derived chemokine. It degrades peptide hormones such as glucagon. It truncates procalcitonin, a marker for systemic bacterial infections with elevated levels detected in patients with thermal injury, sepsis and severe infection, and in children with bacterial meningitis

Inhibitors of dipeptidyl peptidase IV, also DPP-IV inhibitors or gliptins, are a class of oral hypoglycemics that block DPP-IV. They can be used to treat diabetes mellitus type 2. The first agent of the class, sitagliptin, - was approved by the FDA in 2006. The clinical use of presently available orally active inhibitors of DPP-IV, however, has been associated with side effects that have been in part attributed to the inhibition of related serine proteases, such as DPP8 and DPP9.

Glucagon increases blood glucose levels, and DPP-IV inhibitors reduce glucagon and blood

glucose levels. The mechanism of DPP-IV inhibitors is to increase incretin levels (GLP-1 and GIP), which inhibit glucagon release, which in turn increases insulin secretion, decreases gastric emptying, and decreases blood glucose levels.

Principle of Test Method:

The DPP-IV activity assay is an automated enzymatic assay.

*Please contact nexelis for stability information.