Reference No.	**: - 2411220318**	Age/Gender	: **37 Yrs/Male**
Pt's Name	**: Mr. NAVPREET SINGH**		**AMB-KOS**
Referred By	**: NA**		
Sample Collection Date/Time	**: 14-Nov-2024**	Date	:**14-Nov-2024**
Sample Receiving Date/Time	**: 14-Nov-2024 05:38AM**	Approved Date	:**15-Nov-2024 06:37PM**
Sample From	**: KOS DIAG LAB**	Report Print Time	**:17-Nov-2024 07:02PM**

Molecular Biology

Test Description	Observed Value	Biological Reference Interval
MTHFR Gene PCR*		
MTHFR Mutation Detection		
C677T*	Homozygous mutant	
A1298C*	Wild	

Method : Real Time Polymerase chain Reaction (PCR)

MTHFR (Methylene Tetrahydrofolate Reductase) is an enzyme involved in the anabolism of methionine, where it converts 5,10 methylenetetrahydrofolate to 5-methyltetrahydrofolate. This molecule, with homocysteine will form methionine in downstream processes. The gene for MTHFR expression is located on chromosome 1 of the human genome. Polymorphisms at 677 (C>T) and 1298 (A>C) reduce enzymatic activity. Reduction of MTHFR enzymatic activity results in increase of homocysteine levels and may produce hyperhomocysteinemia. Hyperhomocysteinemia is an independent risk factor for causing various blood vessel diseases including brain and/or heart blood vessel diseases and peripheral venous thrombosis. Because of the risks associated with reduction in MTHFR enzymatic activity, a method of determining the genetic staus of the MTHFR gene is necessary.

Interpretation :
Limit of detection: 10 ng/ul
"Wild": No mutation in MTHFR gene
"Heterozygous mutant": Partial mutancy in MTHFR gene
"Homozygous mutant": 100% mutancy in MTHFR gene

Methodology details :
* DNA is extracted from samples by US FDA approved Automatic Extraction machine based on magnetic bead technology.
* Purified DNA is then Amplified and quantified using CE-IVD approved Real time PCR.
* Extraction and Amplification controls (IC) are incorporated in each run to ensure more accurate and precise detection of mutation.

*** End Of Report ***

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