



## ColoVantage. A novel test for colorectal screening

### Colorectal cancer screening

Colorectal cancer (CRC) is one of the most common cancers found in men and women; Saudi Arabia is not an exception (the fourth most common cancer).

Regular screening, beginning at the age of 50 for men and women, is the key role to prevent colorectal cancer. It is recommended to perform screening using colonoscopy every 10 years, or sigmoidoscopy every 5 years, or fecal occult blood (3 successive samples) annually.



Along with Lack of knowledge or awareness, one of the primary barriers to achieve the screening objectives is the individual's compliance with currently available screening guidelines.

Colonoscopy or sigmoidoscopy, although more effective, require extensive bowel preparation, invasion of privacy, and sedation, and do not overcome current compliance issues in CRC screening. Stool-based assays such as the FOBT have been available for decades, their usage remains limited. The introduction of a blood-based test for assessing colorectal cancer risk that could be administered as a component of standard preventive care could remove a significant obstacle to screening.

### What is Epigenetics

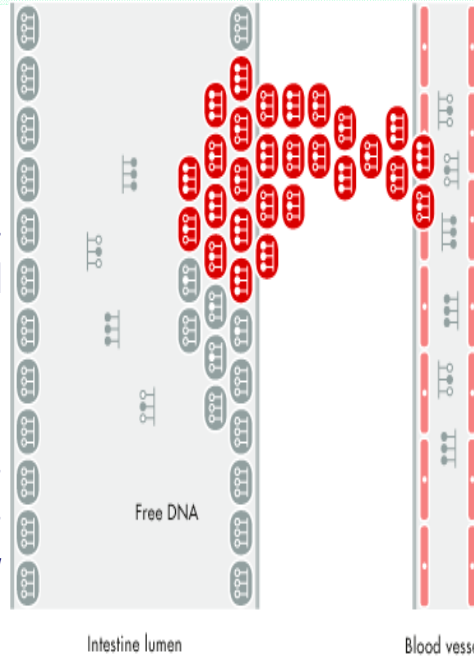
Epigenetics literally means "above" or "on top of" genetics. It refers to external modifications to DNA that turn genes "on" or "off." These modifications do not change the DNA sequence, but instead, they affect how cells "read" genes. Epigenetic changes alter the physical structure of DNA. One example of an epigenetic change is DNA methylation — the addition of a methyl group, or a "chemical cap," to part of the DNA molecule. An epigenetic change that silences a tumor suppressor gene — such as a gene that keeps the growth of the cell in check — could lead to uncontrolled cellular growth.



# ColoVantage. Methylated Septin 9

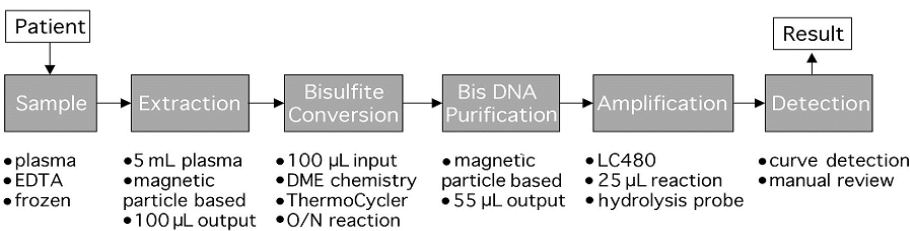
## Introduction

The ColoVantage test detects methylated DNA from the *SEPT9* gene in plasma. It is highly recommended for those who do not adhere to the established current colorectal screening methods. ColoVantage aids in the detection of colorectal cancer (CRC). physicians may order the ColoVantage test for screen-eligible patients who have previously avoided established colorectal cancer screening methods.



## Method

Real-time polymerase chain reaction (PCR)-based measurement of methylated *SEPT9* DNA



## Interpretive Information

An individual whose ColoVantage test result is positive may be at increased risk for colorectal cancer and further evaluation should be considered (colonoscopy).. In case of a negative result, it is recommended to repeat the test annually or follow the universal guidelines.

## Test Information

<b>Test Code</b>	1824	<b>Sample transport</b>	Frozen
<b>Sample Required</b>	5mL EDTA Plasma	<b>Reported</b>	Average 10 days
<b>Patient Preparation</b>	Not Required	<b>Performing Lab</b>	Quest Diag. USA

## What is the normal function of the *SEPT9* gene ?

The *SEPT9* gene (Located on chromosome 17) provides instructions for making a protein called septin-9, which is part of a group of proteins called septins. Septins are involved in a process called cytokinesis, which is a step in cell division.

The septin-9 protein also seems to act as a tumor suppressor, which means that it regulates cell growth and keeps cells from dividing too fast or in an uncontrolled way.

## How are changes in the *SEPT9* gene related to Colorectal Cancers

Methylation of the Septin 9 promoter region, also termed epigenetic modification, has been associated with colorectal cancer. Determination of epigenetic events is a useful tool for early detection of disease since regulation of gene expression by aberrant DNA methylation is a well-characterized event in tumor biology, and is extensively described for CRC. Increased levels of cell-free circulating methylated DNA in the blood of cancer patients compared to healthy controls have been reported and can be used as a target for CRC detection.