

GP11a (ITGB3) T1565C POLYMORPHISM

ORDERING INFORMATIONS

REF: GEN-007-25 RDM Code: 2254597/R
Tests: 25 Reactions: 31
REF: GEN-007-50 RDM Code: 1734432/R
Tests: 50 Reactions: 62
CND Code: W0106010499
Manufacturer: BioMol Laboratories s.r.l.

CONTENTS OF THE KIT

The kit consists of reagents for Real-Time PCR amplification
*reagents for the extraction of genomic DNA are not supplied in the kit

For in vitro diagnostic use



PRODUCT CHARACTERISTICS

Device belonging to the family of in vitro medical devices **REAL-TIME QUALITATIVE PCR-GENETIC VARIANTS**. Detection of the T1565C GP11a (PIA1/A2) polymorphism by Real-Time PCR technique. Kit optimized for Real-Time PCR instrumentation Biorad CFX96 Dx, Biorad Opus Dx and Agilent AriaDx.

SCIENTIFIC BACKGROUND

Integrin receptors are heterodimeric cell adhesion proteins that consist of an α and a β subunit. Integrin $\beta 3$ is essentially expressed on endothelial cells, platelets, osteoclasts and hematopoietic cells and corresponds to the group of integrins that bind to proteins containing the arginine-glycine-aspartic acid (RGD) motif. Glycoprotein 11a (GP11a), also referred to as the beta subunit of the platelet membrane protein GP 11b/11a receptor complex, is encoded by the ITGB3 gene and is a surface protein found in various tissues. Exons and introns of the entire ITGB3 gene have been shown to contain many polymorphic regions, one of which has been associated with multiple pathologies.

CLINICAL SIGNIFICANCE

This polymorphism (T1565C, dbSNP ID: rs5918) corresponds to a substitution of the amino acid residue (leucine/proline) in position 33 (PIA1/A2) of the polypeptide chain. This SNP has been reported to be a risk factor for many types of diseases, such as myocardial infarction, ischemic heart disease, type 2 diabetes, asthma, many cancers including non-Hodgkin's lymphoma, colon cancer, ovarian cancer and cancer. renal. It has also been documented that platelets bearing the $\beta 3$ subunit of the $\alpha 11b\beta 3$ integrin with a proline at position 33 are characterized by an increased risk of platelet aggregation and immunogenic properties.

§ Platelet Glycoprotein Receptor 1a-C807T and 11a-PIA1/PIA2 Genetic Polymorphisms Are Associated With Enhanced Platelet Function in Women With Recurrent Miscarriages *Cureus* 2023 Oct 27;15(10):e47832. doi: 10.7759/cureus.47832. eCollection 2023 Oct.

§ *Thromb J.* 2023 Jul 28;21(1):81. doi: 10.1186/s12959-023-00525-z. High prevalence of thrombophilic risk factors in patients with central retinal artery occlusion

§ *Cureus.* 2023 Oct 27;15(10):e47832. doi: 10.7759/cureus.47832. eCollection 2023 Oct. Platelet Glycoprotein Receptor 1a-C807T and 11a-PIA1/PIA2 Genetic Polymorphisms Are Associated With Enhanced Platelet Function in Women With Recurrent Miscarriages

§ Genetic variants associated with colorectal brain metastases susceptibility and survival. *Pharmacogenomics J.* 2017 Jan; 17 (1):29-35. Epub 2015 Dec 22.

§ Common rs5918 (PIA1/A2) polymorphism in the *ITGB3* gene and risk of coronary artery disease. *Arch Med Sci Atheroscler Dis.* 2016 Apr 27; 1 (1):e9-e15. eCollection 2016.

§ Integrin beta-3 genetic variants and risk of venous thromboembolism in colorectal cancer patient. *Thromb Res.* 2015 Nov; 136 (5):865-9. Epub 2015 Aug 28.



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DESCRIPTION	LABEL	VOLUME		STORAGE
		GEN-007-25	GEN-007-50	
Mix oligonucleotides and probes	Mix T1565C GP11a 10X	1 x 77,5 µl	2 x 77,5 µl	-20°C
Mix buffer and Taq polymerase enzyme	Mix Real-Time PCR 2X	1 x 387,5 µl	2 x 387,5 µl	-20°C
Deionized H ₂ O	Deionized H ₂ O	1 x 1 ml	1 x 1 ml	-20°C
Genomic DNA or recombinant DNA	Control 1	1 x 22 µl	2 x 22 µl	-20°C
Genomic DNA or recombinant DNA	Control 2	1 x 22 µl	2 x 22 µl	-20°C
Genomic DNA or recombinant DNA	Control 3	1 x 22 µl	2 x 22 µl	-20°C

TECHNICAL CHARACTERISTICS

COD. GEN-007-25 / COD. GEN-007-50

STABILITY	18 months
REAGENTS STATUS	Ready to use
BIOLOGICAL MATRIX	Genomic DNA extracted from whole blood, tissue, cells
POSITIVE CONTROLS	Recombinant DNA for at least 3 analytical sessions (GEN-007-25) Recombinant DNA for at least 6 analytical sessions (GEN-007-50).
VALIDATED INSTRUMENTS	Biorad CFX96 Dx, Biorad Opus Dx and Agilent AriaDx
TECHNOLOGY	Real-time PCR; oligonucleotides and specific probes; 2 FAM/HEX fluorescence channels
RUNNING TIME	85 min
THERMAL CYCLING PROFILE	1 cycle at 95 °C (10 min); 45 cycles at 95 °C (15 sec) + 60 °C (60 sec)
ANALYTICAL SPECIFICITY	Absence of non-specific pairings of oligonucleotides and probes; absence of cross-reactivity
LIMIT OF DETECTION (LOD)	≥ 0,016 ng of genomic DNA
LIMIT OF BLANK (LOB)	0% NCN
REPRODUCIBILITY	99,9%
DIAGNOSTIC SPECIFICITY / DIAGNOSTIC SENSITIVITY	100%/98%