DIAGNOSTICI E TECNOLOGIE BIOMEDICHE
BIOLOGIA MOLECOLARE

UNI EN ISO 9001
UNI CEI EN ISO 13485

# MAJOR HISTOCOMPATIBILITY COMPLEX, CLASS I, G (HLA-G)
## Variant 3'UTR 14bp del/ins
## AMPLI Set HLA G REAL-TIME Cat. n.1.505 RT

HLA-G (major histocompatibility complex class I, G) is a protein coding gene.
HLA-G gene is on chromosome 6 (6p21.3) and the gene most polymorphic regions are in the regulation region 5' (5'UTR) and in the untranslated region 3' (3'UTR); those regions may contribute to expression HLA-G regulation.
The diseases associated with HLA-G are vaginal cancer, serious pre-eclampsia and couple's infertility. As fetus genotype depends on both parents, in order to evaluate the embryo potential protein sHLA-G production the testing of HLA-G gene variants is performed on both partners.
The HLA-G molecules, membrane (HLA-G1, G2, G3 e G4) and soluble (sHLA-G1 by proteolytic cleavage, sHLA-G5 by alternative splicing, sHLA-G6 e G7), have tolerogenic functions to innate and adaptative cell response. On maternal-fetal interface, the HLA-G molecule is one of the responsible factors for the immunologic tolerance establishing promoting embryo implantation.
The majority of embryos doesn't implant (> 70%) and only a minority (about 14%) will lead to a near term pregnancy. Nowadays the embryo screening is based mainly on morphologic criteria and cell division.
Scientific articles have been showing the importance of some molecules in embryo developing regulation before the implantation and to the implanting itself. A potential marker is sHLA-G protein (HLA-G soluble). sHLA-G was found in cultures' supernatant of human embryos obtained by IVF; a recent study shows that the presence of this protein is a mandatory prerequisite, but not sufficient, for the implanting process and therefore pregnancy. A clinic pregnancy is possible only if sHLA-G is in the embryo supernatant culture when the transferring is taking place. In addition a poor maternal sHLA-G expression, has been associated with pre-eclampsia, miscarriage and IVF failures. HLA-G seems to have a protective role in the organ transplantation (avoiding allegenic rejection) and in the autoimmune diseases (inhibiting the immune response against self antigene). Recently the HLA-G molecule expression was observed in some tumors, where it may have an important role in the "immune-editing" and "immune-escape". The insertion/deletion of 14 bp (rs16375) in 3'UTR of exon 8 has been correlated to mRNA stability and to protein HLA-G quantity; the insertion (+14 bp) makes mRNA more unstable, consequently it gives rise to a smaller production of HLA-G and lower levels of sHLA-G.
This kit allows the identification of the insertion/deletion of 14bp in 3' UTR of exon 8 of HLA-G gene with Real-Time PCR

**Principle of assay:** A) extraction of genomic DNA; B) amplification and detection using real-time PCR equipment;
**Applicability:** of genomic DNA extracted and purified from whole blood samples and tissue samples from fresh and paraffin.
**Numero di Test:** 25x2.

## REAGENTS and STORAGE

| AMPLIFICATION | |
|---|---|
| PCR mix 5X | -20°C |
| $H_2O$ RNase/DNase free | -20°C |
| Primer-probe mix 20 X HLA-G 3'UTR 14 bp | -20°C |
| Control Ins/Del | -20°C |
| Control Ins/Ins | -20°C |
| Control Del/Del | -20°C |

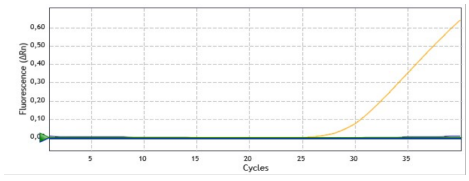
**Stability:** over 18 months if correctly stored.

**References:**

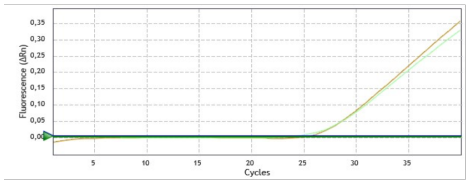

Eskandari-Nasab E. et al. Cancer Biomark.;13, 4: 253-9 (2013)
Piancatelli D. et al. Transplant Proc.; 41, 4: 1187-8 (2009)


## ANALYSIS OF RESULTS

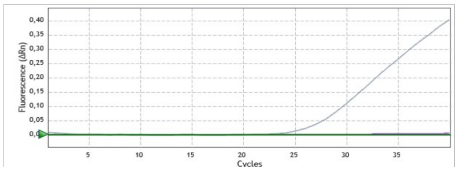
After an Allelic Discrimination post-read run, the software analyzes raw data using the AD specific program. Anywhere it is useful analyzing the amplification plots, in order to check the amplification reaction.



Sample Ins/Ins



Sample Ins/Del



Sample Del/Del