

VIASURE MULTIPLEX

Vancomycin resistance Real Time PCR Detection Kit

Pathogen and product description

Enterococci are common commensal organisms found in the gastrointestinal tract and female genitals. Recently they are recognized as opportunistic pathogens causing nosocomial infections as urinary tract infections, skin infections, respiratory infections, endocarditis and sepsis in compromised host.

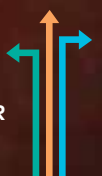
Vancomycin is a glycopeptide antibiotic that inhibits cell wall synthesis and used to treat severe Gram-positive bacterial infections. Vancomycin resistant enterococci (VRE) were first reported in England and France in 1986 and now spread through hospitals worldwide.

The resistance to vancomycin is complex process and needs to presence of different gene clusters. Mainly, they can be divided into two types depending on the pentapeptide precursors produced by vancomycin resistance genes; the precursor ending in D-Alanine-D-Serine (*VanC*-, *VanE*-, *VanG*-, *VanL*- and *VanN*-type) or ending in DAlanine-D-Lactate (*VanA*-, *VanB*-, *VanD*- and *VanM*-type). These pentapeptide precursors showed low-affinities for the glycopeptides and conferred vancomycin-resistances on enterococci.

Transmission of vancomycin-resistant enterococci (VRE) can occur through direct contact with body fluids from colonised or infected patients (blood, wound drainage, urine, stool, sputum and other) or through indirect contact via the hands of health-care workers, or via contaminated patient care equipment or environmental surfaces.

VIASURE *Vancomycin resistance* Real Time PCR Detection Kit is designed for the detection and differentiation of *vanA* and *vanB* genes associated with vancomycin-resistant enterococci (VRE) in clinical samples. After DNA isolation, the identification of Vancomycin resistance is performed by the amplification of a conserved region of the *vanA* and *vanB* genes, using specific primers and a fluorescent-labeled probe.

VIASURE *Vancomycin resistance* Real Time PCR Detection Kit contains in each well all the components necessary for real time PCR assay (specific primers/probes, dNTPS, buffer, polymerase) in an stabilized format, as well as an internal control to discard the inhibition of the polymerase activity,



Analytical sensitivity

VIASURE Vancomycin resistance Real Time PCR Detection Kit has a detection limit of ≥ 10 DNA copies per reaction for *vanA* gene and *vanB* gene (figures 1 and 2).

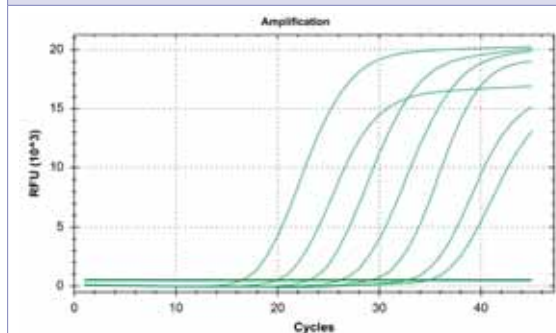


Figure 1. Dilution series of *vanA* gene (10^7 – 10^1 copies/rxn) template run on the Bio-Rad CFX96 Touch™ Real-Time PCR Detection System (FAM channel).

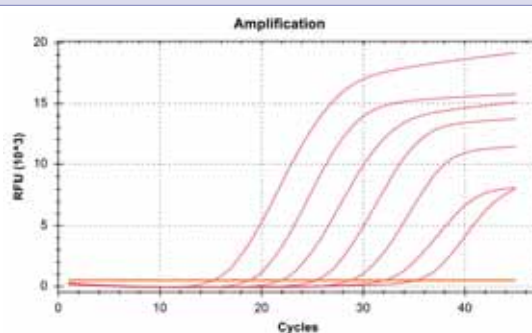


Figure 2. Dilution series of *vanB* gene (10^7 – 10^1 copies/rxn) template run on the Bio-Rad CFX96 Touch™ Real-Time PCR Detection System (ROX channel).

Components

Reagent/Material	Description	Colour	Quantity
Vancomycin resistance 8-well strips	A mix of enzymes, primers-probes, buffer, dNTPs, stabilizers and Internal control in stabilized format	White	6/12 X 8-well strip
Rehydration Buffer	Solution to reconstitute the stabilized product	Blue	1 vial x 1,8 mL
Vancomycin resistance Positive Control	Non-infectious synthetic lyophilized cDNA	Red	1 vial
Negative Control	Non template control	Violet	1 vial x 1 mL
Water RNase/DNase free	Water RNase/DNase free	White	1 vial x 1 mL
Tear-off 8-cap strips	Optical caps for sealing Wells during thermal cycling	Transparent	6/12 x 8-cap strip

Work Flow

One-step rehydration of wells and add your extracted DNA



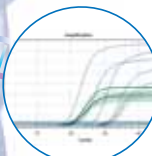
STEP 1
Add 15 μ l of rehydration buffer into each well



STEP 2
Add 5 μ l of DNA sample / positive control / negative control



STEP 3
Load the strips into the thermocycler and run the specified protocol



STEP 4
Interpretate results

Kit References

Reference	Description
VS-VAN106L	Viasure Vancomycin resistance Real Time PCR Detection Kit 6 x 8-well strips, low profile
VS-VAN106H	Viasure Vancomycin resistance Real Time PCR Detection Kit 6 x 8-well strips, high profile
VS-VAN112L	Viasure Vancomycin resistance Real Time PCR Detection Kit 12 x 8-well strips, low profile
VS-VAN112H	Viasure Vancomycin resistance Real Time PCR Detection Kit 12 x 8-well strips, high profile
VS-VAN113L	Viasure Vancomycin resistance Real Time PCR Detection Kit 96-well plate, low profile
VS-VAN113H	Viasure Vancomycin resistance Real Time PCR Detection Kit 96-well plate, high profile



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