

FOR VETERINARY USE ONLY

Vcheck M Ver.4

State-of-the-art POC Molecular Diagnostic System



BIONOTE



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State-of-the-art POC Molecular Diagnostic System

Vcheck M is a molecular diagnostic analyzer capable of both nucleic acid extraction and amplification automatically.

Vcheck M makes it possible for veterinarians to confirm infectious diseases at the point-of-care and enable fast and effective treatment.



Vcheck M10 Console

SIMPLE & EASY CONTROLLER AND ACCURATE DATA MANAGER



Seamless connectivity (LIS/HIS)



Accurate data analysis algorithm



User friendly interface with animated guide



Specification

Model	: Vcheck M10 Console
Test Capacity	: Up to 8 modules per console
Power	: AC100~240V, 50/60 Hz
Display	: 10.1" color touch screen
Memory	: 5,000 results (Ct values & amplification curves)
Barcode Scanner	: Built-in
Connectivity	: HL7 PCD-01 profile support
Dimension	: 17 * 23 * 39 cm
Weight	: 2 Kg

Ordering Information

Product No.	Product Name	Operating Condition	Packing Unit
VCM752EA	Vcheck M10 Console	10 ~ 40 °C	1 EA

Vcheck M10 Module

RANDOMLY ACCESSIBLE ANALYZER



Minimum maintenance requirements



Easy connection between Modules



Automated nucleic acid extraction
& amplification



**Not
Connected**



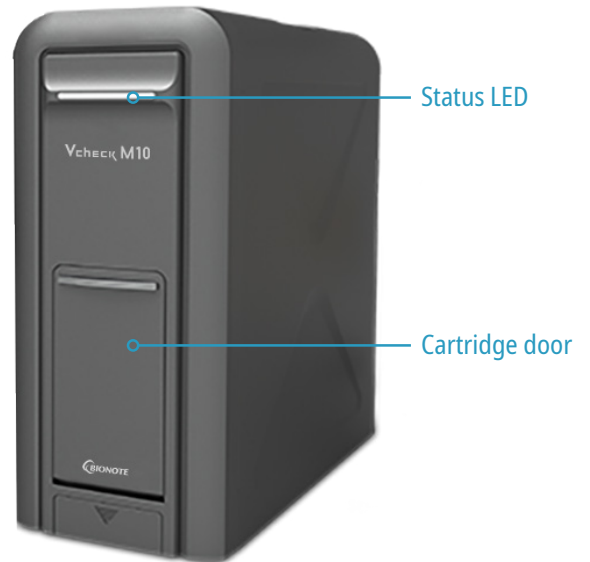
Connecting



**Connection
Completed**



Running



Specification

Model	: Vcheck M10 Module
Test Capacity	: 1 test at a time
Power	: AC100~240V, 50/60 Hz
Extraction	: Silica technology
Test Method	: Real-time PCR, LAMP
Thermo Module	: Peltier module
Optic Module	: 3 channels (FMA, HEX, Cy5)
Dimension	: 14 * 32 * 33 cm
Weight	: 7 Kg

Ordering Information

Product No.	Product Name	Operating Condition	Packing Unit
VCM753EA	Vcheck M10 Module	10 ~ 40 °C	1 EA

Vcheck M10 Analyzer

Fast Results

Sample in → Result out
in about 1 hour

Multiplex

Maximum 12 targets
in a cartridge

Various Setting

Applicable for various species,
sample types, pathogens



Simple Procedure

Automated extraction,
amplification,
and data analysis

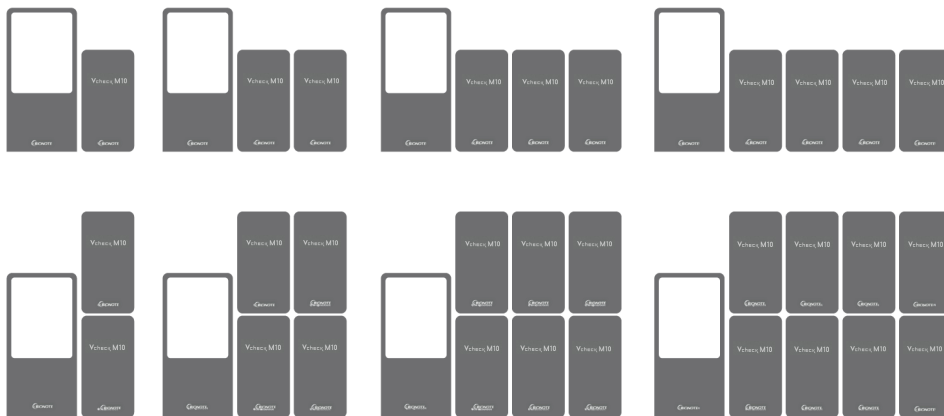
Good Accuracy

High sensitivity
and specificity

Modular & Scalable

Scalable configuration with
up to 8 modules

**Vcheck M10 can be used anywhere diagnostics are needed,
from vet clinics to specialized laboratories**



Vet clinic



Laboratory

Easy 4-Step Test Procedure

1 Scan the sample ID



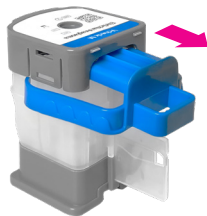
2 Scan the cartridge barcode



3 Apply the sample & close the cartridge



4 Insert the cartridge



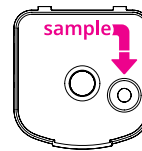
Remove the safety clip



Press down the lid



Dispense the sample



Close the lid

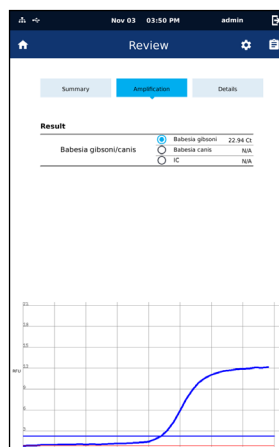
Automatic Result Reading

- No need to set threshold or read result according to cut-off
- Ct value and amplification curve can be checked

Summary

Review	
Summary	Amplification
Test Information Assay Name: Babesia gibsoni/canis Sample ID: 1278957239 Test Type: Specimen Start Time: 2022/11/3 15:50:27 End Time: 2022/11/3 15:50:41 User: admin	
Result Pathogen: V IC Valid Babesia gibsoni: 22.94 Ct Babesia canis: 24.84 Ct	
Report	Back

Amplification



Details

Review	
Summary	Amplification
Assay Name	Babesia gibsoni/canis
Test Result	Positive
User	admin
Pathogen ID	
Sample ID	ph
Sample Type	whole blood
Cartridge Lot No.	MHC00322006
Cartridge Exp	2022/7/5
Module SN	MA10A10A40391
Test Start Date Time	2022/11/3 14:40:08
Test End Date Time	2022/11/3 15:39:32

Vcheck M

Babesia gibsoni/canis

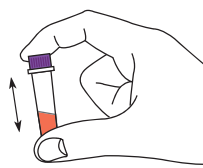
Specification



Detection Target	: <i>Babesia gibsoni</i> <i>Babesia canis</i> (<i>B. canis canis</i> , <i>B. canis vogeli</i> , <i>B. canis rossii</i>)
Species	: Canine
Sample Type	: Whole blood (EDTA) 100 µl
Testing Time	: 60 minutes
Shelf Life	: 12 months

Test Procedure

1 Blood 100 µl + Buffer 500 µl



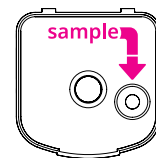
EDTA tube
(purple cap)

+



Buffer tube
(yellow cap)

2 Dispense 600 µl of diluted sample



Performance

Country	Site	Comparison test	<i>B. gibsoni</i>		<i>B. canis</i>	
			Sens.	Spec.	Sens.	Spec.
Korea	Commercial lab	Real-time PCR, Sequencing	100%	100%	100%	100%
Korea	University lab	Conventional PCR, Real-time PCR	100%	100%	-	100%
Poland	University lab	Nested PCR, Sequencing	100%	100%	100%	100%
Brazil	Commercial lab	Real-time PCR	-	100%	-	100%

Ordering Information

Product No.	Product Name	Operating Condition	Packing Unit
VCM102AC	Vcheck M Babesia gibsoni/canis	2 ~ 28 °C	5 Tests/Kit

Vcheck M

Ehrlichia/Anaplasma

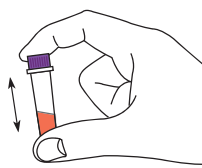
Specification



Detection Target	: ① <i>Ehrlichia</i> spp. (<i>E. canis</i> , <i>E. ewingii</i>) ② <i>Anaplasma</i> spp. (<i>A. phagocytophilum</i> , <i>A. platys</i>)
Species	: Canine, Feline
Sample Type	: Whole blood (EDTA) 100 µl
Testing Time	: 70 minutes
Shelf Life	: 12 months

Test Procedure

1 Blood 100 µl + Buffer 500 µl



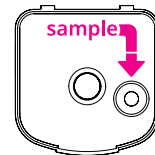
EDTA tube
(purple cap)

+



Buffer tube
(yellow cap)

2 Dispense 600 µl of diluted sample



Performance

Country	Site	Comparison test	<i>Ehrlichia</i> spp.		<i>Anaplasma</i> spp.	
			Sens.	Spec.	Sens.	Spec.
Korea	R&D department	Real-time PCR, Sequencing	100%	100%	100%	100%
Korea	University lab	Conventional PCR	-	100%	-	100%
Poland	University lab	Nested PCR	-	100%	100%	100%
Brazil	Commercial lab	Real-time PCR	100%	100%	100%	100%

Ordering Information

Product No.	Product Name	Operating Condition	Packing Unit
VCM101AC	Vcheck M Ehrlichia/Anaplasma	2 ~ 28 °C	5 Tests/Kit

Vcheck M

Canine Vector 8 Panel

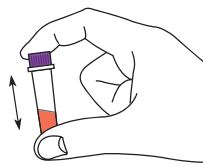
Specification



Detection Target	: ① <i>Ehrlichia</i> spp. (<i>E. canis</i> , <i>E. ewingii</i> , <i>E. chaffeensis</i>) ② <i>Hepatozoon</i> spp. (<i>H. americanum</i> , <i>H. canis</i>) ③ Canine hemotropic mycoplasma (<i>M. haemocanis</i>) ④ <i>Anaplasma</i> spp. (<i>A. phagocytophilum</i> , <i>A. platys</i>) ⑤ <i>Rickettsia rickettsii</i> ⑥ <i>Babesia</i> spp. (<i>B. gibsoni</i> , <i>B. canis canis</i> , <i>B. canis vogeli</i> , <i>B. canis rossi</i>) ⑦ <i>Leishmania</i> spp. (<i>L. infantum</i> , <i>L. donovani</i> , <i>L. mexicana</i>) ⑧ <i>Bartonella</i> spp. (<i>B. henselae</i> , <i>B. koehlerae</i>)
Species	: Canine
Sample Type	: Whole blood (EDTA) 100 µl
Testing Time	: 70 minutes
Shelf Life	: 12 months

Test Procedure

1 Blood 100 µl + Buffer 500 µl

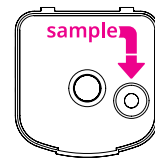


EDTA tube
(purple cap)



Buffer tube
(yellow cap)

2 Dispense 600 µl of diluted sample



Performance

Clinical performance¹

	<i>Ehrlichia</i>	<i>Hepatozoon</i>	<i>Hemoplasma</i>	<i>Anaplasma</i>	<i>Rickettsia</i>	<i>Babesia</i>	<i>Leishmania</i>	<i>Bartonella</i>
Sensitivity	100%	100%	100%	100%	-	100%	-	-
Specificity	100%	-	-	100%	-	100%	100%	-

External evaluation²

Excellent performance is proven through SCI paper by yielding highly correlated results with real-time PCR.

	<i>Ehrlichia</i>	<i>Hepatozoon</i>	<i>Hemoplasma</i>	<i>Anaplasma</i>	<i>Rickettsia</i>	<i>Babesia</i>	<i>Leishmania</i>	<i>Bartonella</i>
Accuracy	100% (4/4)	100% (3/3)	100% (15/15)	100% (20/20)	-	100% (29/29)	100% (1/1)	100% (7/7)

1. SD Biosensor

2. J Vet Res. 2024 Jun 20;68(2):215-222.

Ordering Information

Product No.	Product Name	Operating Condition	Packing Unit
VCM104AC	Vcheck M Canine Vector 8 Panel	2 ~ 28 °C	5 Tests/Kit

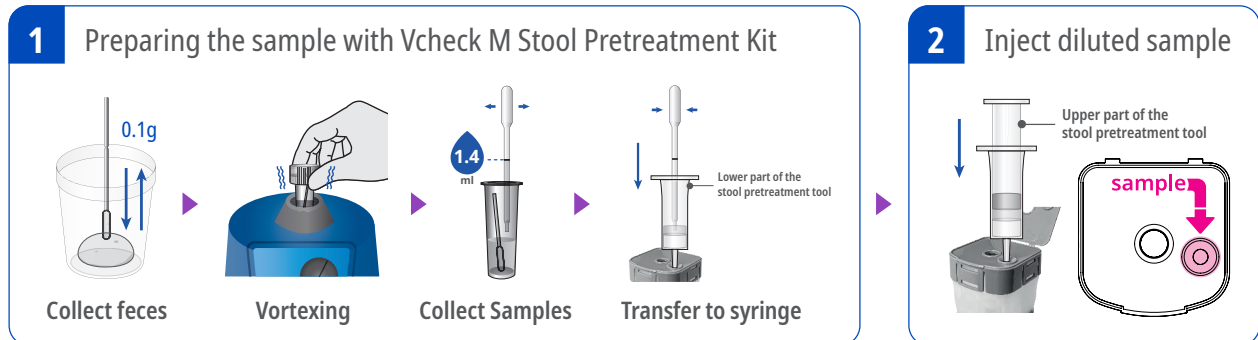
Vcheck M Canine Diarrhea 8 Panel

Specification



Detection Target	: ① Canine parvovirus type 2 ② Canine coronavirus ③ Canine distempervirus ④ <i>Giardia lamblia</i> ⑤ <i>Cryptosporidium</i> spp. ⑥ <i>Salmonella</i> spp. (<i>S. typhimurium</i> , <i>S. enteritidis</i>) ⑦ <i>Clostridium perfringens</i> (alpha toxin gene, enterotoxin gene, netE/F toxin gene) ⑧ <i>Campylobacter</i> spp. (<i>C. coli</i> , <i>C. jejuni</i>)
Species	: Canine
Sample Type	: Feces 0.1g
Testing Time	: 70 minutes
Shelf Life	: 12 months

Test Procedure



Performance

Analytical sensitivity¹ (Limit of detection, LoD)

	<i>Campylobacter</i> spp.	<i>Salmonella</i> spp.	Canine coronavirus	Canine distempervirus	<i>Cryptosporidium</i> spp.	Canine parvovirus 2	<i>Clostridium perfringens</i>	<i>Giardia lamblia</i>
LoD (copies/mL)	2.7X10 ³	2.7X10 ³	2.7X10 ³	2.7X10 ³	2.7X10 ³	2.7X10 ³	2.7X10 ³	9X10 ²

Clinical evaluation² (Compared to Conventional PCR & Real-time PCR)

	<i>Campylobacter</i> spp.	<i>Salmonella</i> spp.	Canine coronavirus	Canine distempervirus	<i>Cryptosporidium</i> spp.	Canine parvovirus 2	<i>Clostridium perfringens</i>	<i>Giardia lamblia</i>
Sensitivity	100% (4/4)	-	100% (14/14)	-	100% (1/1)	100% (19/19)	100% (58/58)	100% (3/3)
Specificity	100% (87/87)	98.9% (91/92)	100% (80/80)	100% (91/91)	100% (91/91)	100% (78/78)	100% (39/39)	100% (89/89)

1. SD Biosensor, Inc. R&D department
2. Commercial laboratories in Korea

Ordering Information

Product No.	Product Name	Operating Condition	Packing Unit
VCM107AC	Vcheck M Canine Diarrhea 8 Panel	2 ~ 28 °C	5 Tests/Kit
(Included)	Vcheck M Stool Pretreatment Kit	2 ~ 28 °C	5 Tests/Kit

Vcheck M

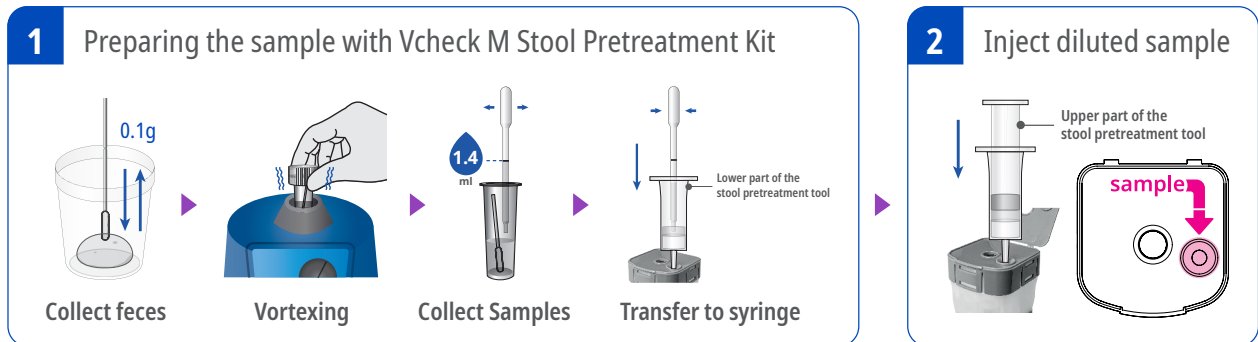
Feline Diarrhea 8 Panel

Specification



Detection Target	: ① Feline parvovirus ② Feline coronavirus ③ <i>Giardia lamblia</i> ④ <i>Tritrichomonas blagburni</i> (formerly <i>T. foetus</i>) ⑤ <i>Toxoplasma gondii</i> ⑥ <i>Salmonella</i> spp. (<i>S. typhimurium</i> , <i>S. enteritidis</i>) ⑦ <i>Campylobacter</i> spp. (<i>C. coli</i> , <i>C. jejuni</i>) ⑧ <i>Cryptosporidium</i> spp.
Species	: Feline
Sample Type	: Feces 0.1g
Testing Time	: 70 minutes
Shelf Life	: 12 months

Test Procedure



Performance

Analytical sensitivity¹ (Limit of detection, LoD)

	<i>Campylobacter</i> spp.	<i>Salmonella</i> spp.	Feline coronavirus	<i>Toxoplasma gondii</i>	<i>Cryptosporidium</i> spp.	Feline parvovirus	<i>Tritrichomonas blagburni</i>	<i>Giardia lamblia</i>
LoD (copies/mL)	2.7X10 ³	2.7X10 ³	9X10 ²	2.7X10 ³	2.7X10 ³	9X10 ²	2.7X10 ³	9X10 ²

Clinical evaluation² (Compared to Conventional PCR & Real-time PCR)

	<i>Campylobacter</i> spp.	<i>Salmonella</i> spp.	Feline coronavirus	<i>Toxoplasma gondii</i>	<i>Cryptosporidium</i> spp.	Feline parvovirus	<i>Tritrichomonas blagburni</i>	<i>Giardia lamblia</i>
Sensitivity	100% (2/2)	-	100% (39/39)	-	-	100% (14/14)	100% (6/6)	100% (6/6)
Specificity	100% (79/79)	100% (81/81)	100% (47/47)	100% (81/81)	100% (81/81)	100% (72/72)	100% (75/75)	100% (77/77)

1. SD Biosensor, Inc. R&D department
2. Commercial laboratories in Korea

Ordering Information

Product No.	Product Name	Operating Condition	Packing Unit
VCM108AC	Vcheck M Feline Diarrhea 8 Panel	2 ~ 28 °C	5 Tests/Kit
(Included)	Vcheck M Stool Pretreatment Kit	2 ~ 28 °C	5 Tests/Kit

Vcheck M FIV/FeLV

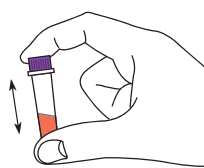
Specification



Detection Target	: Feline immunodeficiency virus Feline leukemia virus
Species	: Feline
Sample Type	: Whole blood (EDTA) 100 µl
Testing Time	: 70 minutes
Shelf Life	: 12 months

Test Procedure

1 Blood 100 µl + Buffer 500 µl



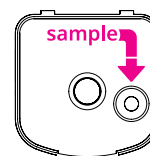
EDTA tube
(purple cap)

+



Buffer tube
(yellow cap)

2 Dispense 600 µl of diluted sample



Performance

Analytical sensitivity (Limit of detection, LoD)

	FIV	FeLV
LOD (copies/ml)	1.4×10^3	1.4×10^3

Ordering Information

Product No.	Product Name	Operating Condition	Packing Unit
VCM109AC	Vcheck M FIV/FeLV	2 ~ 28 °C	5 Tests/Kit

Vcheck M

Canine Anemia 8 Panel

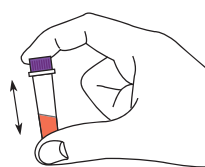
Specification



Detection Target	: ① <i>Ehrlichia</i> spp. (<i>E. canis</i> , <i>E. ewingii</i> , <i>E. chaffeensis</i>) ② <i>Hepatozoon</i> spp. (<i>H. americanum</i> , <i>H. canis</i>) ③ Canine hemotropic mycoplasma (<i>M. haemocanis</i>) ④ <i>Anaplasma</i> spp. (<i>A. phagocytophilum</i> , <i>A. platys</i>) ⑤ <i>Rickettsia rickettsii</i> ⑥ <i>Babesia</i> spp. (<i>B. gibsoni</i> , <i>B. canis canis</i> , <i>B. canis vogeli</i> , <i>B. canis rossi</i>) ⑦ <i>Leptospira interrogans</i> (sv. Autumnalis, Grippotyphosa, Bratislava, Pomona, Canicola, Icterohaemorrhagiae) ⑧ <i>Borrelia</i> spp. (<i>B. burgdorferi</i> , <i>B. afzelii</i> , <i>B. garinii</i>)
Species	: Canine
Sample Type	: Whole blood (EDTA) 100 µl
Testing Time	: 70 minutes
Shelf Life	: 12 months

Test Procedure

1 Blood 100 µl + Buffer 500 µl



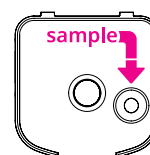
EDTA tube
(purple cap)

+



Buffer tube
(yellow cap)

2 Dispense 600 µl of diluted sample



Performance

Analytical sensitivity (Limit of detection, LoD)

	<i>Ehrlichia</i>	<i>Hepatozoon</i>	<i>Hemoplasma</i>	<i>Anaplasma</i>	<i>Rickettsia</i>	<i>Babesia</i>	<i>Leptospira</i>	<i>Borrelia</i>
LOD (copies/ml)	3×10^3	2.4×10^4	2.4×10^4	1.2×10^4	6×10^3	2.4×10^4	2.4×10^4	1.2×10^4

Clinical performance

	<i>Ehrlichia</i>	<i>Hepatozoon</i>	<i>Hemoplasma</i>	<i>Anaplasma</i>	<i>Rickettsia</i>	<i>Babesia</i>	<i>Leptospira</i>	<i>Borrelia</i>
Sensitivity	100%	100%	100%	100%	-	100%	-	-
Specificity	100%	-	-	100%	-	100%	100%	-

Ordering Information

Product No.	Product Name	Operating Condition	Packing Unit
VCM105AC	Vcheck M Canine Anemia 8 Panel	2 ~ 28 °C	5 Tests/Kit

Vcheck M

Canine Respiratory 8 Panel

Specification



Detection Target

- : ① Canine adenovirus type 2
- ② Canine distemper virus
- ③ Canine Parainfluenza virus
- ④ Canine Respiratory coronavirus
- ⑤ *Mycoplasma cynos*
- ⑥ Canine Influenza virus
- ⑦ *Bordetella bronchiseptica*
- ⑧ Canine herpesvirus type 1

Species

: Canine

Sample Type

: Conjunctival swab and Deep pharyngeal swab

Testing Time

: 70 minutes

Shelf Life

: 12 months

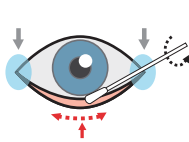
Test Procedure

1 Vortex and invert the tube for 10 Seconds

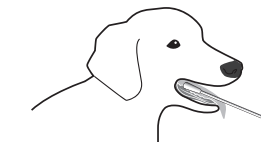
Do not scrape
the blue area

Be careful not to touch the
tongue or too much saliva

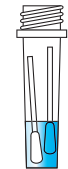
10 sec



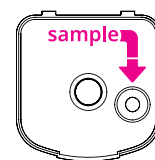
Scrape the red area



Scrape the pharyngeal area



2 Dispense 300 µl of the thoroughly mixed sample



Performance

Analytical sensitivity (Limit of detection, LoD)

	CAV-2	CDV	CPIV	CRCoV	M.cynos	CIV	B.bronchiseptica	CHV-1
LOD (copies/ml)	0.02 TCID50/mL	49.52 TCID50/mL	92.79 TCID50/mL	800 copies/mL	0.37 CFU/mL	0.03 TCID50/ml	145.83 CFU/mL	94800 TCID50/ml

Ordering Information

Product No.	Product Name	Operating Condition	Packing Unit
VCM110AC	Vcheck M Canine Respiratory 8 Panel	2 ~ 28 °C	5 Tests/Kit

Vcheck M

Feline Respiratory 7 Panel

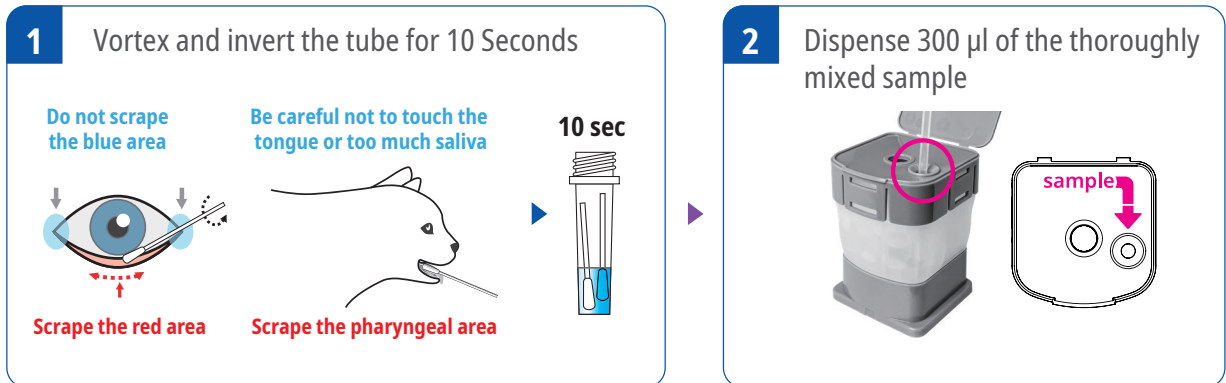
Specification



Detection Target : ① Feline herpesvirus type 1
 ② Feline calicivirus
 ③ Influenza virus
 ④ *Bordetella bronchiseptica*
 ⑤ *Mycoplasma felis*
 ⑥ *Chlamydia felis*
 ⑦ *Streptococcus zooepidemicus*

Species : Feline
Sample Type : Conjunctival swab and Deep pharyngeal swab
Testing Time : 70 minutes
Shelf Life : 12 months

Test Procedure



Performance

Analytical sensitivity (Limit of detection, LoD)

	FHV-1	FCV	Influenza virus	<i>B. bronchiseptica</i>	<i>M. felis</i>	<i>C. felis</i>	SEZ
LOD (copies/ml)	3.3x10 ²	3.3x10 ²	6.7x10 ²	3.3x10 ²	6.7x10 ²	3.3x10 ²	3.3x10 ²

Ordering Information

Product No.	Product Name	Operating Condition	Packing Unit
VCM111AC	Vcheck M Feline Respiratory 7 Panel	2 ~ 28 °C	5 Tests/Kit

Vcheck M

Ordering Information

Analyzer

	Product	Contents	Cat No.
Analyzer	Vcheck M10 Console	M10 Console (Controller)	VCN752EA
	Vcheck M10 Module	M10 Module (Analyzer)	VCN753EA

Cartridge

	Product	Detection Target	Cat No.
Companion Animal	Vcheck M Ehrlichia/Anaplasma	<i>Ehrlichia</i> spp. <i>Anaplasma</i> spp.	VCN101AC
	Vcheck M Babesia gibsoni/canis	<i>Babesia gibsoni</i> <i>Babesia canis</i>	VCN102AC
	Vcheck M Canine Vector 8 Panel	<i>Ehrlichia</i> spp. <i>Hepatozoon</i> spp. Canine hemotropic mycoplasma (CHM) <i>Anaplasma</i> spp. <i>Rickettsia rickettsii</i> <i>Babesia</i> spp. <i>Leishmania</i> spp. <i>Bartonella</i> spp.	VCN104AC
	Vcheck M Canine Anemia 8 Panel	<i>Ehrlichia</i> spp. <i>Hepatozoon</i> spp. Canine hemotropic mycoplasma (CHM) <i>Anaplasma</i> spp. <i>Rickettsia rickettsii</i> <i>Babesia</i> spp. <i>Leptospira interrogans</i> <i>Borrelia</i> spp.	VCN105AC
	Vcheck M FIV/FelV	Feline immunodeficiency virus (FIV) Feline leukemia virus (FeLV)	VCN109AC
	Vcheck M Canine Diarrhea 8 Panel	Canine parvovirus type 2 (CPV-2) Canine coronavirus (CCoV) Canine distemper virus (CDV) <i>Giardia lamblia</i> <i>Cryptosporidium</i> spp. <i>Salmonella</i> spp. <i>Clostridium perfringens</i> <i>Campylobacter</i> spp.	VCN107AC
	Vcheck M Feline Diarrhea 8 Panel	Feline parvovirus (FPV) Feline coronavirus (FCoV) <i>Giardia lamblia</i> <i>Tritrichomonas blagburni</i> <i>Toxoplasma gondii</i> <i>Salmonella</i> spp. <i>Campylobacter</i> spp. <i>Cryptosporidium</i> spp.	VCN108AC

Vcheck M

Ordering Information

Cartridge

	Product	Detection Target	Cat No.
Companion Animal	Vcheck M Canine Respiratory 8 Panel	Canine adenovirus type 2 Canine distemper virus Canine Parainfluenza virus Canine Respiratory coronavirus <i>Mycoplasma cynos</i> Canine Influenza virus <i>Bordetella bronchiseptica</i> Canine herpesvirus type 1	VCM110AC
	Vcheck M Feline Respiratory 7 Panel	Feline herpesvirus type 1 Feline calicivirus Influenza virus <i>Bordetella bronchiseptica</i> <i>Mycoplasma felis</i> <i>Chlamydophila felis</i> <i>Streptococcus zooepidemicus</i>	VCM111AC

MEMO

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State-of-the-art POC Molecular Diagnostic System



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