Technical Data

Hi25™ *Enterobacteriaceae* Identification Kit KB003

Intended use

KB003 is a standardized, colorimetric identification system, a combination of 25 tests for identification of *Enterobacteriaceae* species from clinical specimen and non clinical samples using pure isolate.

Kit Contains :

Each kit contains sufficient material to perform 5/10/20 tests.

1. 5/10/20 kits of Part I.
2. 5/10/20 kits of Part II.
3. Oxidase reagent discs (DD018)
4. Technical product insert.
5. Result Interpretation Chart and Result Entry Datasheet.
6. Identification Index.
7. TDA reagent (R036) for Phenylalanine Deaminase test.
8. Baritt reagent A (R029) for Voges-Proskauer's test.
9. Baritt reagent B (R030) for Voges-Proskauer's test.
10. Methyl Red Indicator (I007) for Methyl Red test
11. Kovac's reagent (R008) for Indole test
12. Sulphanilic acid (R015) for Nitrate test
13. N, N-Dimethyl-1-Napthylamine Reagent (R009) for Nitrate test.

Material Required but not supplied :

1.McFarland standard
2.Inoculation loops, pipettes
3.Enrichment medium / Isolation media

Direction

Preparation of inoculum

- KB003 cannot be used directly on clinical specimens. The organisms to be identified have to be first isolated and purified. Only pure cultures should be used. Isolate the organism to be identified on a common medium like Nutrient Agart (M001)/ Nutrient agar for oxidase (M1274) or a differential medium like MacConkey Agar (M082).
- Pick up a single isolated colony and inoculate in 5 ml BHI Broth (M210) and incubate at 35-37°C for 4-6 hours until the inoculum turbidity is 0.1 OD at 620nm or 0.5 McFarland standard. Some fastidious organisms may require more than 6 hours of incubation. In this case incubate till the inoculum turbidity reaches 0.1 OD at 620nm. Alternatively, prepare the inoculum by picking 1-3 well isolated colonies and make a homogenous suspension in 2-3ml sterile saline. The density of the suspension should be 0.1 OD at 620nm.
- Perform Oxidase test on the organism to be tested. The test is performed using Oxidase disc (DD018) provided with the kit.
- Pick up a well isolated colony and rub it on a single oxidase disc. Positive reaction is indicated by development of deep purple colour within 10 seconds. Colour change in 10-60 seconds indicates a delayed positive reaction. Colour development after 60 seconds or no change in colour indicates a negative reaction. Note the result in the Result Entry Datasheet. Oxidase test must be performed as it is an integral part of the identification system. It must be performed to differentiate *Enterobacteriaceae* from other Gram negative rods.

Inoculation of the kit

1.Open the kit aseptically. Peel off the sealing foil.
2.Inoculate each well with 50 µl of the above inoculum by surface inoculation method.
3.Alternatively, the kit can also be inoculated by stabbing each individual well with a loopful of inoculum

Incubation

Temperature of incubation: 35-37°C. Duration of incubation: 18-24 hours.

Interpretation of results :

Interpret results as per the standards given in the identification index. Addition of reagents in well no 5,6,9,10, and 11of strip 1 should be done at the end of incubation period that is after 18 - 24 hours.

Principle

Each Hi25™ kit is a standardized colorimetric identification system utilizing thirteen conventional biochemical tests and eleven carbohydrate utilization tests. The tests are based on the principle of pH change and substrate utilization. On incubation organisms undergo metabolic changes which are indicated by a colour change in the media that is either visible spontaneously or after addition of a reagent. Oxidase test is performed separately using oxidase reagent disc provided with the kit.

Type of specimen

Pure isolate from clinical specimen and non clinical sample

Specimen collection and handling

Refer direction

Warning and Precautions :

In Vitro diagnostic Use. For professional use only. Read the label before opening the pack. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling clinical specimens. Aseptic conditions should be maintained during inoculation and handling of the kits. Reagents should not come in contact with skin, eyes or clothing. Safety guidelines may be referred in individual safety data sheets.

Limitations:

1.Allow the reagents to come to room temperature after removal from the refrigerator .
2.In case of carbohydrate fermentation test some microorganisms show weak reaction. In this case record the reaction as ± and incubate further upto 48 hours. Orange colour after 48 hours of incubation should be interpreted as a negative reaction.
3.At times organisms give conflicting result because of mutation or the media used for isolation, cultivation and maintenance.
4.The identification index has been compiled from standard references and results of tests carried out in the laboratory.
5.Erroneous false negative results may be obtained if the inoculum turbidity is less than 0.1 OD.
6.Results are more prominent if an enriched culture is used instead of a suspension.
7.It cannot be used directly for clinical specimens. The microorganisms to be identified have to be first isolated on appropriate isolation media. Only pure cultures should be used.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control

Appearance

Two Sterile white opaque strips with 12 wells each. Strip 1 containing sterile media for ONPG, Lysine utilization, Ornithine utilization, Urease detection, Phenylalanine deamination (TDA), Nitrate reduction, H_2S production, Citrate utilization, Voges Proskauer's, Methyl red, Indole, Malonate, Strip 2 containing Esculin hydrolysis tests and 11 different carbohydrates utilization test - Arabinose, Xylose, Adonitol, Rhamnose, Cellobiose, Melibiose, Saccharose, Raffinose, Trehalose, Glucose, Lactose. Oxidase disc are given seperately.

Quantity of medium

0.8 ml of medium in each well.

Sterility Check

Passes release criteria

Interpretation of results :

Interpret results as per the standards given in the identification index. Addition of reagents should be done at the end of incubation period that is after 18 - 24 hours.

Part I :

ONPG Test : Well No. 1

- Colour change from colorless to yellow indicates positive reaction.
- No colour change indicates negative reaction

Lysine utilization: Well No. 2

- Colour change to Purple / Dark Purple indicates positive reaction
- No colour change or yellow colour indicates negative reaction.

Ornithine utilization: Well No. 3

- Colour change to Purple / Dark Purple indicates positive reaction
- No colour change or yellow colour indicates negative reaction.

Urease Test: Well No. 4

- Colour changes to pink indicates positive reaction.
- No colour change indicates negative reaction.

Phenylalanine Deamination Test : Well No. 5

- Add 2-3 drops of TDA reagent (R036).
- Development of dark green colour within one minute indicates a positive reaction.
- No change in colour denotes a negative reaction.

Nitrate Reduction Test : Well No. 6

- Add 1-2 drops of Sulphanilic acid (R015) and 1-2 drops of N,N-Dimethyl-1-Napthylamine Reagent (R009).
- Immediate development of pinkish red colour on addition of reagent indicates positive reaction.
- No change in colour indicates a negative reaction.

H_2S production: Well No. 7

- Orangish yellow colour to black indicates a positive reaction
- No color change or slight yellowish brown indicates a negative reaction.

Citrate utilization: Well No.8

- Positive test is indicated by a colour change to blue colour.
- Green or no colour change indicates a negative reaction.

Voges-Proskauer's Test: Well No.9

- Add 2-3 drops of Baritt reagent A (R029) and 1 drop of Baritt reagent B (R030).
- Positive test is indicated by a development of pinkish red colour in 5 - 10 minutes.
- No colour change or a copper colour (due to reaction of Reagent A and Reagent B) indicates a negative reaction.

Methyl red Test : Well No. 10

- Add 2-3 drops of Methyl red indicator (I007).
- Positive test is indicated by a development of red colour.
- Yellowish orange colour indicates a negative reaction.

Indole Test : Well No. 11

- Add 2-3 drops of Kovac's reagent (R008)
- Positive test is indicated by a development of pinkish red ring.
- No red ring indicates a negative reaction.

Malonate utilization: Well No. 12

- Positive test is indicated by a colour change to blue colour.
- Light green or no colour change indicates a negative reaction.

Part II

Esculin hydrolysis: Well No. 1

- Cream colour changes to black colour indicates a positive reaction
- No colour change or brownish yellow indicates a negative reaction

Carbohydrate fermentation Test : Well No. 2-12

- Positive test is indicated by a colour change to yellow colour.
- Red or no colour change indicates a negative reaction.

Oxidase test

- Change in colour from colourless to deep purple colour within 10 seconds indicates positive reaction.
- Colourless after 60 seconds indicates negative reaction

Strip I	Result Interpretation chart					
No.	Test	Reagents to be added after incubation	Principle	Original colour of the medium	Positive reaction	Negative reaction
1	ONPG	—	Detects $-\beta$galactosidase activity	Colourless	Yellow	Colourless
2	Lysine utilization	—	Detects Lysine decarboxylation	Olive green to Light Purple	Purple / Dark Purple	Yellow
3	Ornithine utilization	—	Detects Ornithine decarboxylation	Olive green to Light Purple	Purple / Dark Purple	Yellow
4	Urease	—	Detects Urease activity	Orangish yellow	Pink	Orangish yellow
5	Phenylalanine Deamination	2-3 drops of TDA reagent	Detects Phenylalanine deamination activity	Colourless	Green	Colourless
6	Nitrate reduction	1-2 drops of sulphanilic acid and 1-2 drops of N, N-Dimethyl-1-Napthylamine	Detects Nitrate reduction	Colourless	Pinkish Red	Colourless
7	H_2S production	—	Detects H_2S production	Orangish yellow	Black	Orangish yellow
8	Citrate utilization	—	Detects capability of organism to utilize citrate as a sole carbon source	Green	Blue	Green
9	Voges Proskauer's	1-2 drops of Baritt reagent A and 1-2 drops of Baritt reagent B	Detects acetoin production	Colourless / Light Yellow	Pinkish red	Colourless/ slight copper
10	Methyl red	1-2 drops of Methyl red indicator	Detects acid production	Colourless	Red	Yellowish- orange
11	Indole	1-2 drops of Kovac's reagent	Detects deamination of tryptophan	Colourless	Pinkish Red	Colourless
12	Malonate utilization	—	Detects capability of organism to utilize sodium malonate as a sole carbon source	Light green	Blue	Light green

Strip II	Result Interpretation chart				
No.	Test	Principle	Original colour of the medium	Positive reaction	Negative reaction
13	Esculin hydrolysis	Esculin hydrolysis	Cream	Black	Cream
14	Arabinose	Arabinose utilization	Pinkish Red / Red	Yellow	Red / Pink
15	Xylose	Xylose utilization	Pinkish Red / Red	Yellow	Red / Pink
16	Adonitol	Adonitol utilization	Pinkish Red / Red	Yellow	Red / Pink
17	Rhamnose	Rhamnose utilization	Pinkish Red / Red	Yellow	Red / Pink
18	Cellobiose	Cellobiose utilization	Pinkish Red / Red	Yellow	Red / Pink
19	Melibiose	Melibiose utilization	Pinkish Red / Red	Yellow	Red / Pink
20	Saccharose	Saccharose utilization	Pinkish Red / Red	Yellow	Red / Pink
21	Raffinose	Raffinose utilization	Pinkish Red / Red	Yellow	Red / Pink
22	Trehalose	Trehalose utilization	Pinkish Red / Red	Yellow	Red / Pink
23	Glucose	Glucose utilization	Pinkish Red / Red	Yellow	Red / Pink
24	Lactose	Lactose utilization	Pinkish Red / Red	Yellow	Red / Pink
25	Oxidase	Done on Oxidase disc separately. Detects cytochrome oxidase production.	Colourless	Deep purple within 10 seconds	White/ Purple after 60 seconds

KB003 : Hi25™ *Enterobacteriaceae* Identification Kit

Identification Index of various *Enterobacteriaceae* species

Tests	ONPG	Lysine	Ornithine	Urease	TDA	Nitrate	H_2S	Citrate Utilization	Voges Proskauer's	Methyl Red	Indole	Malonate
Budvicia aquatica	+	−	−	V	−	+	V	−	−	+	−	−
Buttiauxella agrestis	+	−	+	−	−	+	−	+	−	+	−	V
Cedecea davisae	+	−	+	−	−	+	−	+	V	+	−	+
Cedecea lapagei	+	−	−	−	−	+	−	+	V	V	−	+
Cedecea neteri	+	−	−	−	−	+	−	+	V	+	−	+
Citrobacter amalonaticus	+	−	+	V	−	+	−	V	−	+	+	−
Citrobacter diversus	+	−	+	V	−	+	−	+	−	+	+	+
Citrobacter freundii	+	−	V	V	−	+	V	+	−	+	−	V
Enterobacter aerogenes	+	+	+	−	−	+	−	+	+	−	−	+
Enterobacter amnigenus (Biogroup I)	+	−	V	−	−	+	−	V	+	−	−	+
Enterobacter amnigenus (Biogroup II)	+	−	+	−	−	+	−	+	+	V	−	+
Enterobacter taylorae (E. cancerogenus)	+	−	+	−	−	+	−	+	+	−	−	+
Enterobacter cloacae	+	−	+	V	−	+	−	+	+	−	−	V
Enterobacter gergoviae	+	+	+	+	−	+	−	+	+	−	−	+
Enterobacter sakazakii	+	−	+	−	V	+	−	+	+	−	V	V
Escherichia coli	+	+	V	−	−	+	−	−	−	+	+	−
Escherichia coli, inactive	V	V	V	−	−	+	−	−	−	+	V	−
Escherichia blattae	−	+	+	−	−	+	−	V	−	+	−	+
Escherichia fergusonii	V	+	+	−	−	+	−	V	−	+	+	V
Escherichia hermannii	+	−	+	−	−	+	−	−	−	+	+	−
Escherichia vulneris	+	V	−	−	−	+	−	−	−	+	−	V
Ewingella americana	V	−	−	−	−	+	−	+	+	V	−	−
Hafnia alvei	+	+	+	−	−	+	−	−	V	V	−	V
Klebsiella oxytoca	+	+	−	+	−	+	−	+	+	V	+	+
Klebsiella pneumoniae subspecies ozaenae	V	V	−	−	−	V	−	V	−	+	−	−
Klebsiella pneumoniae subspecies *pneumoniae*	+	+	−	+	−	+	−	+	+	V	−	+
Klebsiella pneumoniae subspecies *rhinoscleromatis*	−	−	−	−	−	+	−	−	−	+	−	+
Klebsiella terrigena	+	+	V	−	−	+	−	V	+	V	−	+
Kluyvera ascorbata	+	+	+	−	−	+	−	+	−	+	+	+
Leclercia adecarboxylata (Escherichia adecarboxylata)	+	−	−	V	−	+	−	−	−	+	+	+
Morganella morganii subspecies *morganii*	−	−	+	+	+	+	−	−	−	+	+	−
Morganella morganii subspecies *sibonii*	−	V	V	+	+	+	−	−	−	V	V	−
Pantoea agglomerans	+	−	V	−	V	+	−	+	+	V	−	+
Pantoea dispersa	+	−	−	−	−	V	−	+	+	V	−	−
Proteus mirabilis	−	−	+	+	+	+	+	V	V	+	−	−
Proteus myxofaciens	−	−	−	+	+	+	−	+	+	+	−	−
Proteus penneri	−	−	−	+	+	+	V	−	−	+	−	−
Proteus vulgaris	−	−	−	+	+	+	+	V	−	+	+	−
Providencia alcalifaciens	−	−	−	−	+	+	−	+	−	+	+	−
Providencia rettgeri	−	−	−	+	+	+	−	+	−	+	+	−
Providencia rustigianii	−	−	−	−	+	+	−	V	−	V	+	−
Rahnella aquatilis	+	−	−	−	+	+	−	+	+	V	−	+
Salmonella Bongori	+	+	+	−	−	+	+	+	−	+	−	−
Salmonella Choleraesuis subspecies Arizonae	+	+	+	−	−	+	+	+	−	+	−	+
Salmonella Choleraesuis subspecies Choleraesuis	−	+	+	−	−	+	+	+	−	+	−	−
Salmonella Choleraesuis subspecies Darizonae	+	+	+	−	−	+	+	+	−	+	−	+
Salmonella Choleraesuis subspecies Houtenae	−	+	+	−	−	+	+	+	−	+	−	−
*Salmonella*Choleraesuis subspecies Indica	V	+	+	−	−	+	+	V	−	+	−	−
Salmonella Choleraesuis subspecies Salamae	V	+	+	−	−	+	+	+	−	+	−	+
Salmonella Enteritidis	−	+	+	−	−	+	+	+	−	+	−	−
Salmonella Typhi	−	+	−	−	−	+	+	−	−	+	−	−
Salmonella Typhimurium	−	+	+	−	−	+	+	+	−	+	−	−
Serratia entomophila	+	−	−	−	−	+	−	+	+	V	−	−
Serratia ficaria	+	−	−	−	−	+	−	+	V	V	−	−
Serratia fonticola	+	+	+	V	−	+	−	+	−	+	−	V
Serratia marcescens	+	+	+	V	−	+	−	+	+	V	−	−
Serratia odorifera (Biogroup I)	+	+	+	−	−	+	−	+	V	+	V	−
Serratia odorifera (Biogroup II)	+	+	−	−	−	+	−	+	+	V	V	−
Serratia plymuthica	V	−	−	−	−	+	−	V	V	+	−	−
Serratia proteamaculans	+	+	+	−	−	+	−	+	V	V	−	−
Serratia rubidaea	+	V	−	−	−	+	−	+	+	V	−	+
Shigella boydii, Shigella flexneri, Shigella dysenteriae	−	−	−	−	−	+	−	−	−	+	V	−
Shigella sonnei	+	−	+	−	−	+	−	−	−	+	−	−
Yersinia enterocolitica	+	−	+	V	−	+	−	−	−	+	V	−
Yersinia frederiksenii	+	−	+	V	−	+	−	V	−	+	+	−
Yersinia intermedia	+	−	+	V	−	+	−	−	−	+	+	−
Yersinia pestis	V	−	−	−	−	V	−	−	−	V	−	−
Yersinia pseudotuberculosis	V	−	−	+	−	+	−	−	−	+	−	−

Please refer disclaimer Overleaf.

KB003 : Hi25™ *Enterobacteriaceae* Identification Kit

Identification Index of various *Enterobacteriaceae species*

Tests	Esculin hydrolysis	Arabinose	Xylose	Adonitol	Rhamnose	Cellobiose	Melibiose	Saccharose	Raffinose	Trehalose	Glucose	Lactose
Budvicia aquatica	−	V	+	−	+	−	−	−	−	−	+	V
Buttiauxella agrestis	+	+	+	−	+	+	+	−	+	+	+	+
Cedecea davisae	V	−	+	−	−	+	−	+	−	+	+	V
Cedecea lapagei	+	−	−	−	−	+	−	−	−	+	+	V
Cedecea neteri	+	−	+	−	−	+	−	+	−	+	+	V
Citrobacter amalonaticus	−	+	+	−	+	+	−	V	−	+	+	V
Citrobacter diversus	−	+	+	+	+	+	−	V	−	+	+	V
Citrobacter freundii	−	+	+	−	+	V	V	V	V	+	+	V
Enterobacter aerogenes	+	+	+	+	+	+	+	+	+	+	+	+
Enterobacter amnigenus (Biogroup I)	+	+	+	−	+	+	+	+	+	+	+	V
Enterobacter amnigenus (Biogroup II)	+	+	+	−	+	+	+	−	−	+	+	V
Enterobacter taylorae (E. cancerogenus)	+	+	+	−	+	+	−	−	−	+	+	−
Enterobacter cloacae	V	+	+	V	+	+	+	+	+	+	+	+
Enterobacter gergoviae	+	+	+	−	+	+	+	+	+	+	+	V
Enterobacter sakazakii	+	+	+	−	+	+	+	+	+	+	+	+
Escherichia coli	V	+	+	−	V	−	V	V	V	+	+	+
Escherichia coli, inactive	−	V	V	−	V	−	V	V	V	+	+	V
Escherichia blattae	−	+	+	−	+	−	−	−	−	V	+	−
Escherichia fergusonii	V	+	+	+	+	+	−	−	−	+	+	−
Escherichia hermannii	V	+	+	−	+	+	−	V	V	+	+	V
Escherichia vulneris	V	+	+	−	+	+	+	−	+	+	+	V
Ewingella americana	V	−	V	−	V	−	−	−	−	+	+	V
Hafnia alvei	−	+	+	−	+	V	−	−	−	+	+	−
Klebsiella oxytoca	+	+	+	+	+	+	+	+	+	+	+	+
Klebsiella pneumoniae subspecies ozaenae	V	+	+	+	V	+	+	V	+	+	+	V
Klebsiella pneumoniae subspecies *pneumoniae*	+	+	+	+	+	+	+	+	+	+	+	+
Klebsiella pneumoniae subspecies *rhinoscleromatis*	V	+	+	+	+	+	+	V	+	+	+	−
Klebsiella terrigena	+	+	+	+	+	+	+	+	+	+	+	+
Kluyvera ascorbata	+	+	+	−	+	+	+	+	+	+	+	+
Leclercia adecarboxylata (Escherichia adecarboxylata)	+	+	+	+	+	+	+	V	V	+	+	+
Morganella morganii subspecies *morganii*	−	−	−	−	−	−	−	−	−	−	+	−
Morganella morganii subspecies *sibonii*	+	−	−	−	−	−	−	−	−	+	+	−
Pantoeaagglomerans	+	+	+	−	+	V	−	+	−	+	+	V
Pantoea dispersa	−	V	+	−	+	V	−	+	−	+	+	−
Proteus mirabilis	−	−	+	−	−	−	−	V	−	+	+	−
Proteus myxofaciens	−	−	−	−	−	−	−	+	−	+	+	−
Proteus penneri	−	−	+	−	−	−	−	+	−	V	+	−
Proteus vulgaris	V	−	+	−	−	−	−	+	−	V	+	−
Providencia alcalifaciens	−	−	−	+	−	−	−	V	−	−	+	−
Providencia rettgeri	V	−	−	+	V	−	−	V	−	−	+	−
Providencia rustigianii	−	−	−	+	−	−	−	V	−	−	+	−
Rahnella aquatilis	+	+	+	−	+	+	+	+	+	+	+	+
Salmonella Bongori	−	+	+	−	+	−	V	−	−	+	+	−
Salmonella Choleraesuis subspecies Arizonae	−	+	+	−	+	−	+	−	−	+	+	V
Salmonella Choleraesuis subspecies Choleraesuis	−	+	+	−	+	−	+	−	−	+	+	−
Salmonella Choleraesuis subspecies Diarizonae	−	+	+	−	+	−	+	−	−	+	+	V
Salmonella Choleraesuis subspecies Houtenae	−	+	+	−	+	V	+	−	−	+	+	−
Salmonella Choleraesuis subspecies Indica	−	+	+	−	+	−	V	−	−	+	+	V
Salmonella Choleraesuis subspecies Salamae	V	+	+	−	+	−	−	−	−	+	+	−
Salmonella Enteritidis	−	+	+	−	+	−	+	−	−	−	+	−
Salmonella Typhi	−	−	V	−	−	−	+	−	−	+	+	−
Salmonella Typhimurium	−	+	+	−	+	−	+	−	−	−	+	−
Serratia entomophila	+	−	V	−	−	−	−	+	−	+	+	−
Serratia ficaria	+	+	+	−	V	+	V	+	V	+	+	V
Serratia fonticola	+	+	V	+	V	−	+	V	+	+	+	+
Serratia marcescens	+	−	−	V	−	−	−	+	−	+	+	−
Serratia odorifera (Biogroup I)	+	+	+	V	+	+	+	+	+	+	+	V
Serratia odorifera (Biogroup II)	V	+	+	V	+	+	+	−	−	+	+	+
Serratia plymuthica	V	+	+	−	−	V	+	+	+	+	+	V
Serratia proteamaculans	V	+	+	−	V	−	+	+	+	+	+	−
Serratia rubidaea	+	+	+	+	−	+	+	+	+	+	+	+
Shigella boydii, Shigella flexneri, Shigella dysenteriae	−	V	−	−	−	−	V	−	V	V	+	−
Shigella sonnei	−	+	−	−	V	−	V	−	−	+	+	−
Yersinia enterocolitica	V	+	V	−	−	V	−	+	−	+	+	−
Yersinia frederiksenii	V	+	+	−	+	+	−	+	V	+	+	V
Yersinia intermedia	+	+	+	−	+	+	V	+	V	+	+	V
Yersinia pestis	V	+	+	−	−	−	V	−	−	+	+	−
Yersinia pseudotuberculosis	+	V	+	−	V	−	V	−	V	+	+	−

Please refer disclaimer Overleaf.

Storage and Shelf Life

On receipt store between 2-8°C. Use before expiry date on the label. Product performance is best if used within stated expiry period.

Disposal

After use, kits and the instruments used for isolation and inoculation (pipettes, loops etc.) must be disinfected using a suitable disinfectant and then discarded by incineration or autoclaving in a disposal bag. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (2,3).

Reference

1.Bergey's Manual of Systematics of Archaea and Bacteria (BMSAB), 2015.
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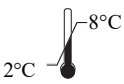
IVD ***In vitro*** **diagnostic medical device**



Storage temperature

EC REP CEpartner4U,Esdoornlaan13,
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CE Marking

Do not use if package is damaged

Do not re-use

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