

PRODUCT SPECIFICATION SHEET



DIFFERENTIATION DISCS

X Factor /V Factor / X + V Factor Discs

USE

The Differentiation discs are used for the presumptive identification of *Haemophilus* species on the basis of their requirements for X or V growth factor or both. Member of the genus *Haemophilus* require hemin (X factor) and/or nicotinamide-adenine-dinucleotide (V-factor). Together with the X factor and V factor, the need for either one or both factors provides the main means of differentiation of these organisms. *Haemophilus* species requiring both X and V factors exhibit growth only in the vicinity of the X + V factor disks.

PRINCIPLE

Traditional identification criteria include haemolysis on horse or rabbit blood and the requirement for X and/or V factors for growth. To establish X and V factor requirements, discs impregnated with each factor are placed on unsupplemented media (Mueller Hinton Agar / Trypticase Soy Agar) that has been inoculated with a light suspension of the organism. After overnight incubation at 35°C in ambient air, the plate is examined for growth around each disc. Many X factor requiring organisms are able to carry over in a factor from the primary medium to give false negative results.

COMPOSITION:

1 pack contains 50 disks.

Sterile filter paper disks:

- impregnated with hemin and nicotinamide adenine dinucleotide (X + V factor disks; ID009).
- impregnated with hemin (X factor disks; ID007).
- impregnated with nicotinamide adenine dinucleotide (V factor disks; ID008).

PROCEDURE

1. Inoculate the surface of the Mueller Hinton Agar / Trypticase Soy Agar plate with the test organisms by surface spreading using sterile swab.
2. The inoculum density should be approximately equivalent to McFarland 0.5 Standard.
3. Aseptically, place the X, V and X+V factor discs on the plate well apart from each other.
4. Incubate the plate at 35-37°C for 24-48 hours.
5. Recommended the disc position on the Agar plate:

Disc	Place
X factor disc	12 O'clock
V factor disc	4 O'clock
X + V factor disc	8 O'clock

6. Observe the growth in the neighbourhood of the disc. The test organism requiring X factor grows only in the vicinities of the X factor discs, those who require V factor grows only in the vicinities of the V disc and those who require X and V factor grows only in the vicinities of the X + V discs.

INTERPRETATION OF RESULTS

A clearly defined zone of growth (which may need viewing under magnification), around one or more discs identifies the species as *Haemophilus* as shown in the Quality Control Table. *H. influenzae* produces discrete zones; about 20mm in size but *H. parainfluenzae* gives more diffuse zones generally of a larger size.

STORAGE & STABILITY

Store in the freeze a below -10°C. Allow to equilibrate to the room temperature before opening then return to freezer storage immediately after use.

PRECAUTIONS

For Invitro Diagnostic use only.



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Observe approved biohazard precautions and aseptic techniques. Product to be used only by adequately trained and qualified laboratory personnel. All biohazard waste should be sterilized before disposal.

QUALITY CONTROL

- Check for signs of deterioration.
- Quality control must be performed with at least one organism to demonstrate positive reaction. Use known strains of *Haemophilus influenzae* to monitor the performance of the differentiation discs and the medium.
- Do not use product if the reactions with control organisms are incorrect.
- Do not use heavy suspension of the test organism as X or V Factor carryover from the primary growth medium may take place.

Identification of *Haemophilus* species that require X and / or V Factors:

Organism	Without growth Factor	X Factor	V Factor	X + V Factor
<i>Haemophilus influenzae</i>	-	-	-	+
<i>Haemophilus parainfluenzae</i>	-	-	+	+
<i>Haemophilus ducreyi</i>	-	+	-	+
<i>Bordetella pertussi</i>	+	+	+	+

LIMITATIONS

It is recommended that biochemical and/or serological tests are performed on colonies from pure culture to confirm identification

PACKAGING

Product Name : X Factor /V Factor / X + V Factor Differentiation Discs

Product Code : ID007 / ID008 / ID009

Available Pack sizes : 50 Discs in a vial or a Box of 20 vials containing 50 discs each.

REFERENCES

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FURTHER INFORMATION

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