MODIFIED OXFORD AGAR

INTENDED USE
Remel Modified Oxford Agar is a medium recommended for use in qualitative procedures for the isolation of *Listeria monocytogenes* in food samples.

SUMMARY AND EXPLANATION
Listeria monocytogenes is a common contaminant in raw milk, meats, vegetables, seafood, and in the food-processing environment.[1,2] In 1989, Curtis described Oxford Agar, a selective medium for *L. monocytogenes*.[3] Lee and McClain modified Oxford Agar by replacing the original selective agents with moxalactam.[4] This medium is recommended by the U.S. Department of Agriculture Food Safety Inspection Service and the American Public Health Association (APHA) for use following enrichment procedures for the recovery of *L. monocytogenes* from meat and dairy products.[5,6]

PRINCIPLE
Columbia Agar Base provides peptones and other essential nutrients. *L. monocytogenes* hydrolyzes esculin to form 6,7-dihydroxycoumarin which reacts with ferric ions to form a black precipitate in the medium surrounding the colonies. Lithium chloride, colistin, and moxalactam are selective agents which inhibit the growth of background organisms, such as gram-positive cocci and gram-negative bacilli.

REAGENTS (CLASSICAL FORMULA)*

Columbia Agar Base	38.1	g	Ferric Ammonium Citrate	0.5	g
Lithium Chloride	15.0	g	Colistin	0.01	g
Esculin	1.0	g	Moxalactam	0.015	g
			Demineralized Water	1000.0	ml

pH 7.2 ± 0.2 @ 25°C

*Adjusted as required to meet performance standards.

PRECAUTIONS
This product is For Laboratory Use only. It is not intended for use in the diagnosis of disease or other conditions.

PROCEDURE
Methods for detection of *L. monocytogenes* vary with the material under examination. Selective enrichment and cold enrichment have been shown to increase isolation rates, especially when small numbers of bacterial cells are present in the sample (<100 bacteria per gram). Choose an appropriate method based on the type of sample to be tested. Follow established laboratory procedures for sample preparation, media inoculation, and incubation. Consult appropriate references for further instructions.[1,2,5,6]

RESULTS
On Modified Oxford Agar, colonies of *Listeria* spp. are round in shape, approximately 1 mm in diameter, black in color, and surrounded by a black zone.

QUALITY CONTROL
Each lot number of Modified Oxford Agar has been manufactured, packaged, and processed in accordance with current Good Manufacturing Practice regulations. All lot numbers have been tested using the following quality control organisms and have been found to be acceptable. Testing of control organisms should be performed in accordance with established laboratory quality control procedures.

CONTROL	INCUBATION	RESULTS
Listeria monocytogenes ATCC®7646	Aerobic, 18-24 h @ 33-37°C	Growth w/ blackening
Escherichia coli ATCC®25922	Aerobic, 18-24 h @ 33-37°C	Inhibition (partial to complete)
Staphylococcus aureus ATCC®25923	Aerobic, 18-24 h @ 33-37°C	Inhibition (partial to complete)

LIMITATIONS
1. *Listeria* spp. other than *L. monocytogenes* may grow on Oxford Agar.
2. Enterococci may grow on Modified Oxford Agar and exhibit blackening of the agar. Such colonies require differentiation from *Listeria* spp. using additional biochemical testing. Follow established laboratory procedures for further instructions.[1,2,5,6]
3. This test is only part of the overall scheme for identification of *L. monocytogenes.* Additional biochemical and serological testing is required for definitive identification. Consult appropriate references for further instructions.[1,2,5,6]

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Refer to the front of Remel *Technical Manual of Microbiological Media* for **General Information** regarding precautions, product storage and deterioration, specimen collection, storage and transportation, materials required, quality control, and limitations.

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