# 17152 Karmali Campylobacter Agar (Base) (Campylobacter Selective Agar acc. Karmali) NutriSelect® Plus

Blood free medium for selective isolation and cultivation of thermotolerant *Campylobacter* species from food and animal feeds. It is recommended by ISO Committee under the specification ISO 10272:1995.

**Composition:**

| Ingredients | Grams/Litre |
|---|---|
| Peptone, special | 23.0 |
| Corn starch | 1.0 |
| Sodium chloride | 5.0 |
| Charcoal | 4.0 |
| Agar | 12.0 |

Final pH 7.4 +/- 0.2 at 25°C

Store granulated media between 10-30°C in tightly closed container and the prepared medium at 20-30°C. Avoid freezing and overheating. Once opened keep powdered medium closed to avoid hydration. Use before expiry date on the label.

| | |
|---|---|
| Appearance(color): | Grey to black, free flowing powder |
| Gel strength: | Firm, comparable with 1.2 % AGAR GEL |
| Color and Clarity: | Black coloured, opalescent gel forms in Petri plates |

**Directions:**
Suspend 22.5 g in 490 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 121°C for 15 minutes. Cool to 50°C. Aseptically add 5 ml Hemin solution (1.6mg (Cat. No. 51280) /5ml) and rehydrated contents of 1 vial of Campylobacter Selective Supplement (Cat. No. 17780). Mix well and pour into sterile petri plates.

**Principle and Interpretation:**
*Campylobacter* are carried in the intestinal tract of animals and therefore, contaminate foods of animal's origin. *Campylobacter jejuni* is recognized as a leading cause of acute bacterial gastroenteritis in humans and eating foods of animal origin has been associated with many of these illnesses (1). *Campylobacter jejuni* and *Campylobacter coli* are the most common Campylobacter species associated with diarrheal illness and are clinically indistinguishable (2). Karmali Campylobacter agar is based on the formulation described by Karmali et al. (3) and is recommended for the isolation of Campylobacter species. It is a modification of the original formulation of Karmali et al. The original Campylobacter Blood Free medium contains sodium pyruvate in the agar base. Campylobacter Medium (Karmali) incorporates this ingredient into the selective supplement. The original medium also contains sodium desoxycholate for the inhibition of Gram-positive organisms, whereas with Campylobacter Medium (Karmali) suppression of Gram-positives is achieved by the inclusion of vancomycin. Campylobacter Selective Supplement (Karmali), containing vancomycin, cefoperazon and cycloheximide, and hemin has to be added separately. Karmali Campylobacter Agar Base is also recommended by the ISO Committee (4).
Peptone provides nitrogenous, carbonaceous compounds and other essential growth nutrients. Activated Charcoal and corn starch decomposes and neutralizes hydrogen peroxide and other toxic metabolites, sodium chloride maintains the osmotic equilibrium. Hemin provides important grow

factors and sodium pyruvate (present in the supplement) enhances, the aerotolerance of microaerophilic Campylobacter by quenching the toxic forms of oxygen. The antibiotics in the supplement gives a certain selectivity, Vancomycin suppresses gram-positive organisms, Cefoperazon inhibits gram-negative bacteria expect *Campylobacter* and Cycloheximide suppresses fungal growth. The inoculated plates are incubated in an atmosphere consisting of approximately 5-6% $O_2$, 10% $CO_2$ and 84-85% $N_2$ at 42°C.

Cultural characteristics observed after an incubation at 42°C for 42-48 hours.

| Organisms (ATCC/WDCM) | Growth |
|---|---|
| *Campylobacter coli* (33559/00072) | +++ |
| *Campylobacter jejuni (*29428/00156) | +++ |
| *Escherichia coli* (25922/00013) | +/- |

References:


1. 1.Vanderzant C. and Splittstoesser D.F., (Eds.),1992, Compendium of Methods for the Microbiological Examination of Foods, 3rd Ed., APHA, Washington, D.C.
2. Murray P. R., Baron E. H., Pfaller M. A., Tenover F. C. and Yolken R. H., (Ed.), 1995, Manual of Clinical Microbiology, 6th Ed., American Society for Microbiology, Washington, D.C.
3. Karmali M.A., Simor A.E., Roscoe M., Fleming P.C, Smith S.S. and Lane J. (1986) J.Clin.Micro. 23. 456-459.
4. 4.International Organization for Standardization (ISO), 1995, Draft ISO/DIS 10272.
5. George H. A., Hoffman P. S. and Krieg N. R., 1978, J. Clin. Microbiol., 8:36.
6. Hoffman P. S. et al, 1979, Can. J. Microbiol., 25:8


**Precautions and Disclaimer**

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.