



# I Pure Culture Techniques 1-7

**1 Microbiology Safety, 2 Preparing Culture Media, 3 Operating an Autoclave, 4 Membrane Filtration, 5 Subculturing, 6 Streak Plate, 7 Swab, Spread & Pour Plate**

## Pure Culture 1 Microbiology Safety

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- Objectives/Key Words
- Multistate Outbreak
- Guidelines for Biosafety
- Risk Groups & Biosafety Levels✓
- Personal Protection 1✓-2✓
- Laboratory Facilities 1✓, 2✓, 3\*✓
- Stock Cultures & Environmental Samples✓✓
- Laboratory Practices 1✓, 2\*✓, 3✓
  - Disposable Gloves\*\*✓
  - Aerosols 1\*\*✓-2\*\*\*\*✓
  - Disposable Loops & Needles\*\*✓
  - Lab Manuals & Notebooks\*✓
  - Microbiology Spill\*✓
  - Waste Management✓
- Training Practices✓
- Document Practices✓
- 40 interactive pdf pages
- 91 illustrations
- \* 16 techniques videos
  - \* (1.1) Biological Safety Cabinet (BSC)
  - \* (1.2) Disinfect Laboratory Bench
  - \* (1.3/1.4) Wear/Remove Disposable Gloves
  - \* (1.5) Pipetting 1: mechanical pipetter
  - \* (1.6) Pipetting 2: inside edge/surface
  - \* (1.7) Microincinerator I: loops & needles
  - \* (1.8) Microincinerator II: culture tubes
  - \* (1.9, 1.10) Microincinerator III/IV: smears
  - \* (1.11) Disposable Loop
  - \* (1.12) Disposable Needle
  - \* (1.13) Computer Tablet
  - \* (1.14) Microbiology Spill
  - \* (1.15) Simple Staining
  - \* (1.16) *Proteus* Swarming
- ✓ 21 best practice animations
- ❖ 4 scenic microbiology, 22 images, 2 videos♦
  - ❖ Best Practice in a Galápagos Fish Market♦
  - ❖ *Garra rufa* Doctor Fish♦
  - ❖ Plaka Street Vendor, Athens, Greece
  - ❖ Steamed Dumplings in Singapore

## Pure Culture 2 Preparing Culture Media

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- Objectives/Key Words
- Broths, Deeps, Plates & Slants
  - Synthetic Media
  - Complex Media
  - Selective Media
  - Differential Media
  - Selective & Differential Media
- Preparing Culture Media 1\*\*\*\*-2\*\*
- Forming Agar Slants\*\*
- Pouring & Drying Agar Plates 1\*\*\*-2\*\*
- Storing Media\*
- 18 interactive pdf pages
- 28 illustrations, 11 images of microbes
- \* 4 techniques animations
- \* 10 techniques videos
- ✓ 1 best practice animation
- **Pure Culture Quick Quiz 2: Culture Media**
- **Pure Culture Question Bank 1.1✓-1.3**

## Pure Culture 3 Operating an Autoclave

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- Objectives/Key Words
- Sterilization by Wet Heat & Dry Heat
- The Autoclave (Steam Sterilizer)✓
- **Fast & Slow Exhaust\***
- **The Autoclave Cycle\*✓**
- **Opening the Autoclave Door\*✓**
- **Time/Temperature 1✓, 2✓, 3\*\*✓**
- 17 interactive pdf pages
- 27 illustrations
- \* 5 techniques videos
- ✓ 7 best practice animation
- **Pure Culture Quick Quiz 3A: Operating an Autoclave**
- **Pure Culture Quick Quiz 3B: Best Practice**
- **Pure Culture Question Bank 3.1✓-3.5**

## Pure Culture 4 Membrane Filtration

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- Objectives/Key Words
- Heat-Sensitive Culture Media
- Membrane Filters
- Filtration Equipment
- **Membrane Filtration Procedure\*\*\*\***
  - 1 Assembly, 2 Autoclave, 3 Filtration
- **Dispensing Sterile Media\*\***
- 8 interactive pdf pages
- 7 illustrations
- \* 2 techniques animations
- \* 4 techniques videos
- **Pure Culture Quick Quiz 3: Membrane Filtration**

## Pure Culture 5 Subculturing

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- Objectives/Key Words
- Aseptic Techniques
- **Be Focused!**
- **Disinfect & Organize Laboratory Bench\*\***
- Biological Containment Cabinet\*
- Subculturing Tools
- **No Mouth Pipetting**
- **Labeling Cultures\*\*\*✓**
- **Inoculating Loop 1-2\*\***
- **Broth Subculture 1A-1B (Biosafety Level 1)\*\*✓**
- **Broth Subculture 2A-2B (Biosafety Level 2)\*\*✓**
- **Broth Subculture 3 (disposable loops)\*\*\*✓**
- **Plate to Broth Subculture (BSL1)\*\*✓**
- **Plate to Broth Subculture (BSL2)\*\*✓**
- **Plate to Broth Subculture (disposable loops)\*\*\*✓**
- Inoculating Needle
- **Agar Deep 1 (BSL1)\*\*✓**
- **Agar Deep 2 (BSL2)\*\*✓**
- **Agar Deep 3,4 (DN, BSL1, BSL2)\*\*\*✓**
- **Agar Slant 1 (DL, BSL1)\*\*✓**
- **Agar Slant 2 (BSL2)\*\*✓**
- Pasteur Pipette
- **Pasteur Pipette (Overview)\*\*\*✓**
- **Pasteur Pipette 1A\*\*✓, 1B\*\*✓, 1C\*\*✓ (BSL1)**
- **Pasteur Pipette 2A\*\*✓, 2B\*\*✓, 2C\*\*✓ (BSL2)**
- Serological Pipette
- **Serological Pipette (Overview)\*\*\*✓**
- **Serological Pipette 1A\*\*✓, 1B\*\*✓, 1C\*\*✓ (BSL1)**
- **Serological Pipette 2A\*\*✓, 2B\*\*✓, 2C\*\*✓ (BSL2)**
- **Discard for Contaminated Materials\*✓**
- **A Microbiology Spill!\***
- 45 interactive pdf pages
- 43 illustrations
- \* 15 techniques animations
- \* 27 techniques videos
- ✓ 27 best practice animations
- **Pure Culture Quick Quiz 5A: Subculturing**
- **Pure Culture Quick Quiz 5B: Best Practice**
- **Pure Culture Question Bank 5.1\*\*\*✓**

## Pure Culture 6 Streak Plate

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- Objectives/Key Words
- Quadrant Streak Plate (Overview)✓
- **Streak Plate 1 (Biosafety Level 1)\*\*✓**
- **Streak Plate 2 (Biosafety Level 2)\*\*✓**
- **Streak Plate 3 (disposable loops, BSL2)\*\*✓**
- **Label Culture Plates (BSL1), (BSL2)\*\*✓**
- **Seal Plates with Parafilm\***
- **Incubate Streak Plates\***
- Excellent, Fair & Poor Streak Plates
- Mixed Cultures
- Pure Cultures
- Actively-Motile Bacteria
- Profuse & Spreading Growth
- Recognize Contaminants!✓
- **Single-Streak Plate (BSL1)\*\*✓**
- **Single-Streak Plate (BSL2)\*\*✓**
- **Single-Streak Plate (disposable loops)\*\*✓**
- Single-Streak Plates
- 29 interactive pdf pages
- 60 illustrations, 48 images of microbes
- \* 6 techniques animations
- \* 10 techniques videos
- ✓ 10 best practice animations
- **Pure Culture Quick Quiz 6A: Streak Plate**
- **Pure Culture Quick Quiz 6B: Best Practice**
- **Pure Culture Question Bank 6.1✓-6.5**

## Pure Culture 7 Swab, Spread & Pour Plate

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- Objectives/Key Words
- Lawns & Individual Colonies
- Plating Techniques (Overview)✓
- **Swab Plate Technique (Biosafety Level 1)\*\*✓**
- **Swab Plate Technique (Biosafety Level 2)\*\*✓**
- **Alcohol Flaming of Forceps\*\*\*✓**
- **Serial Dilution Procedure (Overview)\*\*✓**
- **No Mouth Pipetting✓**
- Serological Pipette
- **Serial Dilution (Biosafety Level 1) 1\*\*✓, 2\*\*✓, 3\*\*✓**
- **Serial Dilution (Biosafety Level 2) 1\*✓, 2\*✓**
- **Spread Plate (BSL1) 1A\*\*✓-1B\*\*✓**
- **Spread Plate (BSL2) 2A\*\*✓-2B\*\*✓**
- **Micropipetter 1-2\*\***
- **Spread Plate (micropipetter) 3A\*\*✓-3B\*\*✓**
- **Pour Plate (BSL1) 1A\*\*✓-1B\*\*✓**
- **Pour Plate (BSL2) 2A\*\*✓-2B\*\*✓**
- **Viable Plate Counts\*✓**
- Swab Plates 1✓-2✓
- Spread Plates✓
- Pour Plates✓
- 35 interactive pdf pages
- 43 illustrations, 16 images of microbes
- \* 12 techniques animations
- \* 12 techniques videos
- ✓ 27 best practice animations
- **Pure Culture Quick Quiz 7A: Swab/Spread/Pour**
- **Pure Culture Quick Quiz 7B: Best Practice**
- **Pure Culture Question Bank 7.1✓**