

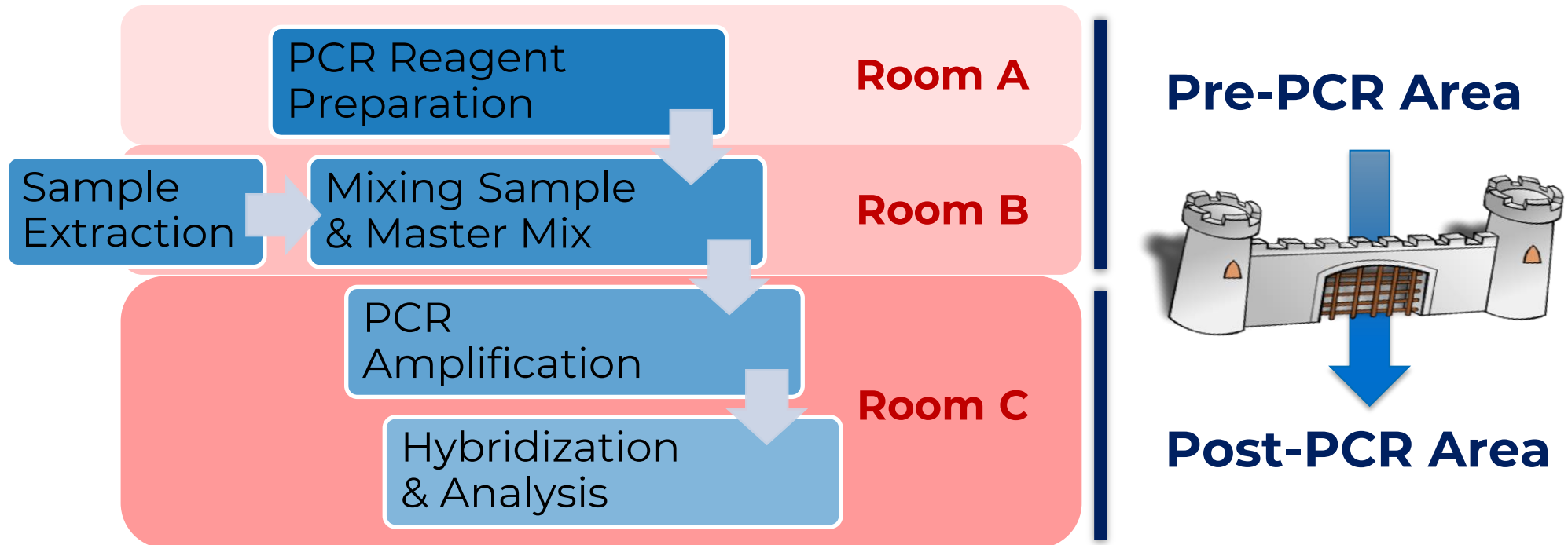
Lab Requirement

For PCR-based molecular assays



Organization of Laboratory

- Separate, dedicated rooms & equipment for pre- and post- PCR process
- Proceed in a unidirectional manner (Room A > B > C)



PCR Reagent
Preparation

Mixing Sample
& Master Mix

PCR
Amplification

Hybridization &
Analysis

Room A

Room A is dedicated for -

- PCR reagents mixing
- Master mix aliquot
- Regular cleaning
- Storage of PCR reagents, primers, enzymes, etc.

Restricted from any templates and post-PCR contaminants

PCR Reagent
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Room A

Materials & Equipment

Required

- Pipettes
- Filter pipette tips
- Microtubes
- Minicentrifuge
- Vortexer
- Personal protective equipment (PPE)
- Cleaning bleach, alcohol & wipes
- Refrigerator & freezer
- Laminar flow hood

Optional

- Microtube racks
- Benchtop cooler

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Room B

Room B is dedicated for -

- DNA & RNA sample extraction
- Sample quantification & dilution
- Controls reconstitution
- Mixing of master mix & samples
- Regular cleaning
- Storage of unopened kits, opened controls, DNA & RNA samples, etc.
- Store reagents and samples separately in the dedicated refrigerator or freezer
- Other general pre-PCR lab works



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Room B

Materials & Equipment

Required

- Pipettes
- Filter pipette tips
- Microtubes
- Minicentrifuge
- Vortexer
- Extraction kit & equipment
- Qubit™ Fluorometer
- Biosafety cabinet
- Personal protective equipment (PPE)

- Cleaning bleach, alcohol & wipes
- Refrigerators & freezers

Optional

- Microtube racks
- BENCHTOP cooler
- General lab equipment

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Room C

Room C is dedicated for -

- PCR and amplicon denaturation
- Hybridization reagents setup
- Hybridization
- Fluorescence detection
- Regular cleaning
- Storage of amplicons, used hybridization buffer, π Code, SA-PE, wash buffer, etc.

Store reagents and amplicons separately in the dedicated refrigerator

Everything introduced into this room must not leave without decontamination

PCR Reagent
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Room C

Materials & Equipment

Required

- Pipettes
- Filter pipette tips
- Minicentrifuge
- Vortexer
- Personal protective equipment (PPE)
- Cleaning bleach, alcohol & wipes
- Refrigerator
- 96-well plate

- Thermocycler
- IntelliPlex 1000
- PlexBio 100 & computer

Optional

- Microtube racks
- PCR cooler
- Ultrapure water

Pre-PCR room A - Materials & Equipment List

| Item | Spec. | Note |
|------------------------|---------------------------------------|---------------------|
| Required | | |
| Pipettes | 1-1000 μ L | Calibrate regularly |
| Filter pipette tips | Aerosol-resistant | - |
| Microtubes | 0.2 / 1.5 mL tubes | - |
| Minicentrifuge | Slots for 1.5 / 2 mL tubes | - |
| Vortexer | - | - |
| Lab coat | Disposable or decontaminate regularly | Dedicated to room A |
| Gloves | Disposable | - |
| Goggle | - | - |
| Cleaning bleach | 0.5-1% sodium hypochlorite | - |
| Cleaning alcohol | 70% ethanol | - |
| Paper wipes | - | - |
| Refrigerator & freezer | 4°C / -20°C | Maintain regularly |
| Laminar flow hood | With UV lamp | Maintain regularly |
| Optional | | |
| Microtube racks | Slots for 0.2 / 1.5 / 2 mL tubes | - |
| Benchtop cooler | Slots for 1.5 / 2 mL tubes | - |



Pre-PCR room B - Materials & Equipment List

| Item | Spec. | Note |
|----------------------------|---------------------------------------|---------------------|
| Required | | |
| Pipettes | 1-1000ul | Calibrate regularly |
| Filter pipette tips | Aerosol-resistant | - |
| Microtubes | 1.5 / 2 mL tubes | - |
| Minicentrifuge | Slots for 0.2 / 1.5 / 2 mL tubes | - |
| Vortexer | - | - |
| Extraction kit & equipment | Refer to IFU | - |
| Qubit™ Fluorometer | Invitrogen, any models | - |
| Biosafety cabinet | With UV lamp | Maintain regularly |
| Lab coat | Disposable or decontaminate regularly | Dedicated to room B |
| Gloves | Disposable | - |
| Goggle | - | - |
| Cleaning bleach | 0.5-1% sodium hypochlorite | - |
| Cleaning alcohol | 70% ethanol | - |
| Paper wipes | - | - |
| Refrigerators & freezers | 4°C / -20°C / -80°C | Maintain regularly |
| Optional | | |
| Microtube racks | Slots for 0.2 / 1.5 / 2 mL tubes | - |
| Benchtop cooler | Slots for 0.2 / 1.5 / 2 mL tubes | - |

Post-PCR room C - Materials & Equipment List

| Item | Spec. | Note |
|-----------------------------------|---|---------------------|
| Required | | |
| Pipettes | Single Channel: 20-1000µL 8-Channel Pipette: 10-20µL | Calibrate regularly |
| Filter pipette tips | Aerosol-resistant | - |
| Minicentrifuge | Slots for 0.2/1.5/2 mL tubes | - |
| Vortexer | - | - |
| Lab coat | Disposable or decontaminate regularly | Dedicated to room C |
| Gloves | Disposable | - |
| Goggle | - | - |
| Cleaning bleach | 0.5-1% sodium hypochlorite | - |
| Cleaning alcohol | 70% ethanol | - |
| Paper wipes | - | - |
| Refrigerator | 4°C | Maintain regularly |
| DigiPlex™ Thermocycler | Plexbio, Cat. #80018 | Maintain regularly |
| PlexBio™ 100 Analyzer | Plexbio, Cat. #80000 | Maintain regularly |
| Industrial Computer | Plexbio, Cat. #80002 | - |
| IntelliPlex™ 1000 πCode Processor | Plexbio, Cat. #80033 | Maintain regularly |
| U Tray | Plexbio, Cat. #80023 | - |
| V Tray | Plexbio, Cat. #80024 | - |
| 96-well Microplate | Plexbio, Cat. #80025 / Greiner, Cat. #655101 | - |
| Optional | | |
| Microtube racks | Slots for 0.2 mL tubes | - |
| PCR cooler | Slots for 0.2 mL tubes | - |
| Ultrapure water | DNase and RNase free | Maintain regularly |



Thank You

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