

A close-up photograph of a person wearing a blue protective suit and gloves, holding a petri dish. The petri dish contains several small, reddish-brown bacterial colonies. The background is dark, and the lighting is focused on the petri dish and the person's hands.

# Health, Medical & Biosecurity





## DEFENCE RESEARCH CAPABILITY CATEGORY: **HEALTH, MEDICAL & BIOSECURITY**

### **UWA Competitive Advantage**

- Capability to handle and manipulate security sensitive biological agents (SSBAs), in vitro testing of novel drugs, virulence screening of biological threat agents at Physical Containment (PC) level 2 laboratories and extensive experience in PC3 experimental and in vivo studies.
- Antimicrobial resistance including developing medical countermeasures to deadly human fungal bio-warfare and bio-terrorism agents, and antibacterial targets and therapies to specific bacteria.
- Development of superior sensing technologies for detection of, and methodologies to rapidly identify, decontaminate and eliminate security-sensitive, dangerous biological agents.
- Identify, decontaminate and eliminate critical bio-warfare and bio-terrorism threats to food security and food exports.
- Identification of naturally self-decontaminating materials, relevant to the sterilisation of military equipment (vehicles, armament, clothing etc.) following overseas deployments.
- Human Performance Optimisation through injury management, spinal cord repair, soft tissue regeneration, enhanced cooling from hyperthermia, mechanisms of and delay of muscle fatigue.
- Chemical measurement of stress, assessment tools for screening and early detection of mental health problems and remote health provision using wearables.

**Infrastructure and expertise for the rapid development of medical countermeasure technologies and products to provide effective protection of Defence personnel from a range of chemical, biological and radiological threats, pandemics and emerging infectious diseases.**





### Outcomes and Impact

- UWA researchers are focused on identifying new antibiotics that are capable of treating a broad range of bio-warfare agents with a reduced chance of developing antimicrobial resistance.
- UWA has funding partnerships with UK Ministry of Defence, Singapore Ministry of Defence, Defence Science Technology Group.

### Capabilities and facilities

- Researchers have extensive experience in containment level 3 work (PC3) and experience in Biosafety Level 2 and 3 work in both experimental and animal laboratories.
- Capability to handle and manipulate security sensitive biological agents (SSBAs), in vitro testing of novel drugs, also including virulence screening at PC2.
- Capability to develop medical countermeasures and antimicrobial resistant technologies in chemical and biochemical laboratories (Bayliss Building).

### Contact Details

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