

## NCTC news - May 2017

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### Hazard Group 3 bacteria in the NCTC collection

In the UK, biological agents are classified into four hazard groups (HG1-4) based on their infectious nature, likelihood of spread through the community and availability/requirement of effective prophylaxis or treatment. Similar categorisations of biological agents are also seen in other parts of the world.

The majority of bacteria within the NCTC collection fall within the HG2 category and can be handled within a Containment Level 2 laboratory on the open bench.

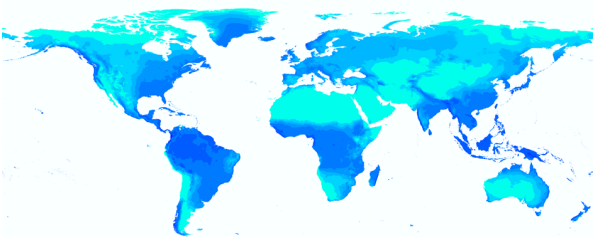
The collection also contains over 500 strains of HG3 organisms which can cause severe human disease and which should be handled at the appropriate Containment Level (routinely CL3) following local risk assessment.

[Read more](#)



*Mycobacterium tuberculosis*

### Global ordering of Culture Collections restricted products



In addition to Hazard Group 3 status, several pathogens and products within the Culture Collections have restrictions during the ordering process due to British Regulations and will require a Culture Collections [registration form](#) to be completed before they can be shipped globally.

One such regulation is the [UK Strategic Export Control Lists](#) (Department for International Trade-Export Control Organisation) which lists all pathogens that require an export licence when shipping outside the European Union. Shipping these listed pathogens within the EU require the end user to complete certain Culture Collection forms.

Other UK regulations that affect the ordering of certain pathogens include:

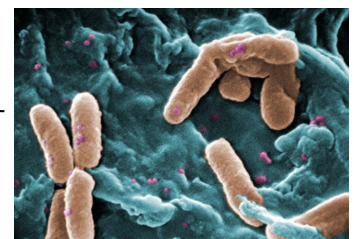
- Specified Animal Pathogens Order (SAPO) listed on [The Approved List of biological agents](#)
- Part 7 of the [Anti-Terrorism, Crime and Security Act 2001 – Schedule 5](#)

### New strains of antibiotic resistant *Pseudomonas aeruginosa* added to the NCTC collection

NCTC has six new strains of *P. aeruginosa* which are positive for the *bla*<sub>VIM</sub> metallo-carbapenemase gene. The strains are representative of the six different sequence types most frequently referred from UK hospital laboratories between 2003-2012 to the Antimicrobial Resistance and Healthcare Associated Infections (AMRHAI) reference unit.

Information about the strains was published in a recent article. Resistance genes in these isolates were detected by PCR and typing was undertaken using nine-locus variable-number tandem repeat (VNTR) analysis and MLST.

[Read the article](#)



[New bacterial strains: NCTC 13714-13720](#)

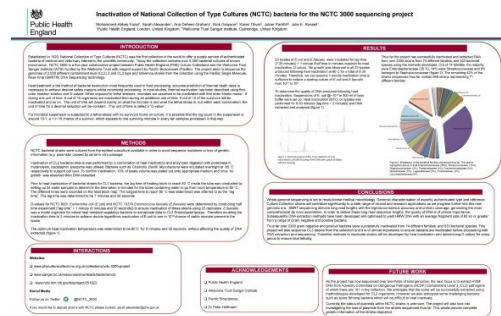
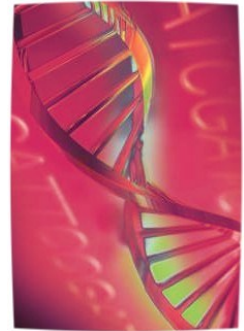
**Don't forget you can order your very own copy of the NCTC brochure!**  
[Click here to order](#)

## Thermal inactivation of Hazard Group 3 NCTC strains

Many of the more hazardous NCTC bacteria such as those classified as Hazard Group 3 (HG3) are now available as bespoke DNA products. An extensive programme of thermal heat inactivation validation reassures that all available DNA products can be confirmed as inactivated prior to the removal from our Containment Level three (CL3) facility.

DNA is currently made to order as a bespoke product so if you are interested in bacterial nucleic acid please contact us for more details:

[CultureCollections.BusinessE@phe.gov.uk](mailto:CultureCollections.BusinessE@phe.gov.uk)



[Download the NCTC 3000 poster](#)

## The European Congress of Clinical Microbiology and Infectious Disease (ECCMID) 2017

ECCMID was a great success this year for Culture Collections. The exhibition team interacted with over 300 attendees including clinicians, microbiologists and bioinformaticians. In total there were 12,494 participants from 126 countries, 195 exhibitors and over 5000 abstracts for poster sessions including our poster on the inactivation of NCTC bacteria for the NCTC 3000 sequencing project.

We look forward to seeing you at ECCMID18 next year in Madrid!

## NCTC in research: MALD-TOF for the identification of *Burkholderia pseudomallei* and differentiation of *Burkholderia* species

The majority of *Burkholderia* species are non-pathogenic, environmental bacteria.

*Burkholderia pseudomallei* however is a Hazard Group 3 organism which infects both animals and humans and is responsible for around 165,000 cases of melioidosis in humans each year.

Suttisunhakul *et al* (2017) evaluated over 650 isolates of *Burkholderia* species in a recent study in order to enhance and expand the current reference database used for identification of the species by MALDI-TOF.

MALDI-TOF is being increasingly used for rapid identification in many clinical laboratories and a comprehensive reference database which '*more fully captures the extensive genetic diversity of this species*' is required.

[Read the full article](#)

[NCTC strains: \*Burkholderia pseudomallei\*](#)

## Meet the team: Ayuen Lual



Ayuen is the Scientific Marketing Manager for Culture Collections. She has worked in Culture Collections for 10 months and has worked for PHE for 16 years. Her role involves managing marketing and communication activities for all four Culture Collections.

Three facts about Ayuen:

- Prefers tea to coffee (never says no to a cup of tea)
- Likes being outdoors, walking and gardening
- Her goal for this year is complete the New Forest 1/2 marathon in September

## Events

NCTC will be attending the following events in July 2017 - we hope to see you there.

Society for Applied Microbiology

New Insights into Food Safety  
3-6 July 2017, Gateshead, UK



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