



Ureaplasma urealyticum/parvum

Ureaplasma urealyticum and *Ureaplasma parvum*, known as the human *Ureaplasma* species, were previously considered to be two biovars and are now designated as two separate species. Originally discovered in 1954 as the human pathogen implicated in non-gonococcal urethritis, these organisms were designated T or 'tiny' *Mycoplasmas* and later given their own species due the distinct metabolic features of metabolising urea and not arginine or glucose. More recently, other species have been discovered causing disease in animals such as cows and pigs (*U. diversum*), cats and dogs (*U. cati*, *U. felinum* and *U. canigenitalium*) and in seals and sea lions (*U. microunguentium* and *U. zalophigenitalium*). No record of these species in humans currently exist.

Since their discovery, additional evidence has accumulated implicating *Ureaplasma* in infertility, postpartum endometritis, chorioamnionitis, spontaneous abortion, stillbirth, premature birth, perinatal morbidity and mortality, pneumonia, bacteraemia, meningitis, and chronic lung disease of prematurity, also known as bronchopulmonary dysplasia.

Bacteria belonging to the *Ureaplasma* genus lack a cell wall. Nutrient requirements include cholesterol and characteristically these bacteria perform urea hydrolysis. The complex and fastidious nutritional requirements of these bacteria, which require vigorously quality-controlled medium for cultivation and several days of incubation, define the *Ureaplasma* genus as a good target for detection via molecular amplification techniques rather than culture.

***Ureaplasma* infections**

Non-gonococcal urethritis

Non-gonococcal urethritis (NGU) is inflammation of the urethra which is not caused by gonorrhoeal infection, but in the majority of cases is sexually acquired. The majority of NGU cases are caused by *C. trachomatis* and *M. genitalium* (Table 1). Recent evidence suggests that *U. urealyticum* may account for 5%-10% of acute NGU cases.

The 2023 BASHH guidelines on STI testing recommend only testing for *Ureaplasma urealyticum* in cases of NGU under specialist care after other STIs have been excluded.

Table 1. Prevalence of the most common pathogens isolated from patients with non-gonococcal urethritis (BASHH NGU 2015).

Micro-organism	Prevalence
<i>C. trachomatis</i>	11%–50%
<i>M. genitalium</i>	6%–50%
Ureaplasmas	11%–26%
<i>T. vaginalis</i>	1%–20%
Adenoviruses	2%–4%
<i>Herpes simplex virus</i>	2%–3%

Neonatal Respiratory Disease

Respiratory disease remains the most common cause of perinatal morbidity and mortality, especially in preterm infants, despite the many advances in neonatal intensive care and resuscitation and the introduction of artificial surfactant in the early 1990s. New-borns may acquire *U. urealyticum* from the mother. Among premature infants, respiratory tract colonisation has been associated with the development of pneumonia, precocious dysplastic changes, chronic lung disease, infant wheezing, acute respiratory insufficiency, and even death. Older children may present with wheezing, pneumonitis, pertussis-like syndrome and different forms of arthritis. The prevalence of *Ureaplasma* in disease is probably underestimated due to the limitations of laboratory diagnosis.

Micropathology assay

Micropathology Ltd's accredited specimen types for the *Ureaplasma urealyticum/ parvum* assay are urine, genital swabs, thin preps, semen, and NPAs. ET aspirates have also been validated but are awaiting UKAS accreditation.

While there is a theoretical risk that our assay may amplify some of the non-human *Ureaplasma* species listed above, there is no record of these species being found in humans and therefore detection of these species presents only a very small risk to diagnosis when analysing clinical specimens.

References

1. Waites KB et al. Mycoplasmas and *Ureaplasmas* as Neonatal Pathogens. Clin. Microbiol. Rev. 2005;18(4):757-789.
2. Zeighami H et al. Prevalence of *Ureaplasma urealyticum* and *Ureaplasma parvum* in semen of infertile and healthy men. Int J STD AIDS. 2009;20(6):387-390.
3. Bradshaw C et al. Etiologies of Non-gonococcal Urethritis: Bacteria, Viruses, and the Association with Orogenital Exposure. J Infect Dis. 2006;193(3):336-345.
4. Kafetzis D et al. Maternal Genital Colonization with *Ureaplasma urealyticum* Promotes Preterm Delivery: Association of the Respiratory Colonization of Premature Infants with Chronic Lung Disease and Increased Mortality. Clin Infect Dis. 2004;39(8):1113-1122.
5. Pinna GS et al. The significance of *Ureaplasma urealyticum* as a pathogenic agent in the paediatric population. Curr Op Infect Dis. 2006 ;19(3):283-289.
6. Nelson S et al. Detection of *Ureaplasma urealyticum* in Endotracheal Tube Aspirates from Neonates by PCR. J. Clin. Microbiol. 1998;36(5):1236-1239.

Links

Please note: links are only correct at time of printing

Controlled Document links:

Non Compliance links:

- **Non Compliance 571: Ureaplasma audit - Information for users** (Locations: Micropathology Ltd)

Changes In This Version

APPROVED CHANGE REQUESTS ===== Change requested by Oliver Ivison on 16-Dec-2024 ET secretions are not UKAS accredited. Approved by Oliver Ivison on 23-Dec-2024 Approver Comments: Include in v5 ----- Updated to reflect current BASHH guidelines and SOP introduction.

Document Revision History

Superseded on 27-Dec-2024 16:55 by John Thomas

Version 4.0 superseded by version 5.0

Document Published on 27-Dec-2024 16:55 by John Thomas

The document was published and is ready to be used.

Authorised on 27-Dec-2024 16:55 by John Thomas

Authorised version 5.0 - . The following users will be notified when a review is due for this document: Jennifer Morris-Cottell, John Thomas Document was scheduled to be released on 2024-12-27 The document was originally due for review on 13-Dec-2024

Authorisation Approved on 27-Dec-2024 16:55 by John Thomas

The user Approved the authorisation request.

Set Pending Authorisation on 27-Dec-2024 16:52 by Oliver Ivison

Document was set as Pending Authorisation and authorisation requests were sent to: John Thomas

Authorisation requested on 27-Dec-2024 16:52 by Oliver Ivison

Authorisation request sent to John Thomas by Oliver Ivison on 27-Dec-2024 16:52.

Reverted to Draft on 27-Dec-2024 16:37 by John Thomas

Document was reverted to draft. Reason to revert: "Italic to bacterial names"

Authorisation Rejected on 27-Dec-2024 16:37 by John Thomas

John Thomas rejected authorisation with the following comments: Italic to bacterial names

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Draft Created on 27-Dec-2024 16:01 by Oliver Ivison

Reason: Periodic review

Change Request Approved on 23-Dec-2024 11:27 by Oliver Ivison

Oliver Ivison approved change request: "Include in v5"

Appendix: Ureaplasma user information sheet

Change Requested on 16-Dec-2024 14:36 by Oliver Ivison

Oliver Ivison requested the following changes: "
ET secretions are not UKAS accredited.
"

Change Requested on 16-Dec-2024 14:36 by Oliver Ivison

Oliver Ivison Requested Change: 'ET secretions are not UKAS accredited.'

Round 1 of reviews started on 13-Nov-2024 02:30 by Account Administrator (iPassport Support)

Review Feedback tasks were assigned to the following users: Oliver Ivison
This review is to be completed by 13-Dec-2024

Compulsory Review Completed on 13-Dec-2023 15:25 by John Thomas

all fine This document was originally due for review on 23-Dec-2023.

Completed Review Feedback on 13-Dec-2023 15:14 by Jennifer Morris-Cottell

Jennifer Morris-Cottell completed task, "No changes required "

Completed Review Feedback on 11-Dec-2023 16:58 by John Thomas

John Thomas completed task, "All fine "

Completed Review Feedback on 30-Nov-2023 11:01 by Holly Kingman (Inactive)

Holly Shropshire completed task, "Review and no changes are required. "

Completed Review Feedback on 27-Nov-2023 16:53 by Mark Collery

Mark Collery completed task, "No changes required "

Round 1 of reviews started on 23-Nov-2023 02:31 by Account Administrator (iPassport Support)

Review Feedback tasks were assigned to the following users: Holly Shropshire, Jennifer Morris-Cottell, John Thomas, and Mark Collery
This review is to be completed by 23-Dec-2023

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Draft Created on 23-Dec-2022 15:09 by Nagela Ford (Inactive)

Reason: Updated by micro staff

Round 1 of reviews started on 20-Sep-2022 02:31 by Account Administrator (iPassport Support)

Review Feedback tasks were assigned to the following users: Jennifer Morris-Cottell, John Thomas, and Mark Collery
This review is to be completed by 20-Oct-2022

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Appendix: Ureaplasma user information sheet

have a review date set.

Reverted to Draft on 23-Feb-2022 12:23 by Nagela Ford (Inactive)

Document was reverted to draft. Reason to revert: "Amend review date in line with other Urea docs"

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Reason: Updated following audit of procedure

Superseded on 21-Oct-2021 08:40 by Andrea Collins

Version 1.0 superseded by version 2.0

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Authorisation Approved on 21-Oct-2021 08:40 by Andrea Collins

The user Approved the authorisation request.

Set Pending Authorisation on 20-Oct-2021 13:43 by Nagela Ford (Inactive)

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Reason: Updated by MC

Review Feedback Requested on 31-Mar-2021 08:37 by Account Administrator (iPassport Support)

Review Feedback tasks were assigned to the following users: John Thomas

This review is to be completed by 08-Jun-2020

Review Feedback Requested on 09-May-2020 02:31 by Not Set

Review Feedback tasks were assigned to the following users: John Thomas This review is to be completed by 08-Jun-2020

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New Document created