

Sending specimens for analysis

Sample requirements

No preparation required. Samples should be in a sterile container and must be clearly labeled. The address of requestor should be given.



Patient details

Please ensure the following details are included on the request form.

- Location stone was removed from (e.g. renal, bladder, etc)
- Patient age and D.O.B.

What happens when stone is received?

The stone is booked onto our computer and delivered to the IR laboratory where it is:

- Washed and dried (24 – 36 hours)
- Catalogued, weighed and photographed.
- Analysed
- Reported and stored

Report format

The reports are designed in a simple, semi-quantative, easy to understand format consisting of results from infra-red spectroscopy of the calculi expressed as a percentage of total composition of the calculi.

As well as the percentage of each of the constituents, the weight and a digital image of the stone are also reported.

What does the test involve?

The sample is ground to a fine powder and a KBR disc is prepared which is analysed using Fourier Transform IR. The Infra-red scans are compared against a library of 18,000+ spectra of calculi and related compounds. The spectra is also visually inspected and compared to a reference library compiled by our own analysis of renal calculi.

Miscellaneous and unidentified compounds are also compared with reference libraries of organic and inorganic compounds such as drugs and polymers.

In cases where the presence of a compound is uncertain there are a number of supporting wet chemical methods that we use to determine it's composition.

Clinical use of the test

Renal stones are a common cause of hospital admission. It has been estimated that 12% of men and 5% of women will develop renal stone disease by the age of 70 years¹. The recurrence rate without medical intervention is 10% within 1 year, 35% within 5 years and 50% at 10 years².

The chemical analysis of renal stones is just one aspect of the management of patients who have renal stone disease. Some experts argue that stone analysis is an essential component to the management of the patient. The identification of cystine, xanthine and 2,8-dihydroxyadenine can lead to specific diagnosis and treatments.

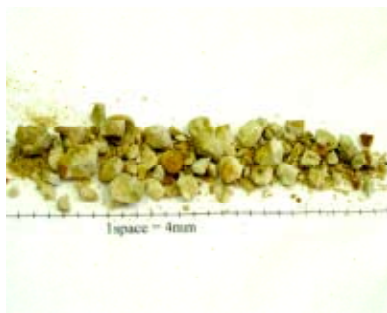
The composition of the centre can give an insight into the environmental condition at the initiation of the stone formation process. The detection of magnesium ammonium phosphate indicates a chronic infection state; hence these stone are called infection stones.

Turnaround

We aim to analyse and report the results within 5 working days from receipt of the stone.

Contact

If you have any concerns please do not hesitate to call the biochemistry department and speak to the duty biochemist– 0121 507 5345 (Bleep via switchboard).



References

1. Wilkinson H. Clinical investigation and management of patients with renal stones. *Ann Clin Biochem* 2001; 38: 180-187.
2. Ljungall S, Danielson BG. A prospective study of renal stone recurrences. *Br J Urol* 1984; 56: 122-4
3. Higgins C. Reading the stones. *Biomedical scientist* 2003; 10: 46-51.



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Renal calculi service



Your questions answered

*Department of Clinical
Biochemistry*

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