

Assays available

- Brivaracetam
- Carbamazepine and Carbamazepine Epoxide
- Clobazam and Desmethylclobazam
- Clonazepam
- Eslicarbazepine
- Ethosuximide
- Felbamate
- Gabapentin
- Lacosamide
- Lamotrigine
- Levetiracetam
- Oxcarbazepine
- Perampanel
- Phenobarbital
- Phenytoin
- Pregabalin
- Primidone
- Rufinamide
- Stiripentol
- Tiagabine
- Topiramate
- Valproate
- Vigabatrin
- Zonisamide

Non - UKAS accredited assays:

- Cenobamate
- Fenfluramine and Norfenfluramine

For the most up to date list of assays and further information visit our website:
epilepsysociety.org.uk/tdm

Suitable sample types

Serum, plasma, whole blood, saliva

Preferred sampling time

Before the next oral dose of ASM

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Transforming lives through
research, advocacy and care.

TDM Unit

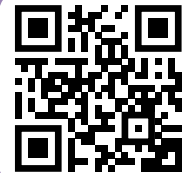
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Therapeutic Drug Monitoring Unit

Services for Medical Professionals



Why use our specialist service?

Comprehensive

We believe our Therapeutic Drug Monitoring (TDM) Unit offers the most comprehensive range of anti-seizure medication (ASM) assays of any laboratory in the UK.

Presently, it is the only ASM TDM service in the UK which provides an analytical service for 24 ASMs currently licensed for clinical use and 4 pharmacologically active metabolites.

Clinical insight

Our registered clinical scientists and neurologists are here to support you.

Cost-effective and efficient

A single sample of serum, plasma or whole blood can cover all the ASMs requested, saving you time and money.

Timely

The assay service is routinely available Monday to Friday, 9am-5pm. For urgent assay requests, please contact the unit in advance. The unit will report on non-urgent assay requests within 3 working days of sample receipt, excluding weekends or bank holidays. Access to results is via our secure portal.

Trusted

We provide a specialist ASM analytical service to the National Hospital for Neurology and Neurosurgery, University College Hospitals NHS Trust, and to many hospitals, forensic and private pathology laboratories, veterinary practices and organisations throughout the UK and from Europe.

Free (unbound) drug determination

When protein binding is altered, patient management would be best guided by monitoring free (pharmacologically relevant) serum concentrations.

Settings in which protein binding impairment occurs include:

- Hypoalbuminemia (e.g. during pregnancy, old age, liver disease, renal disease and many other pathological conditions)
- Conditions associated with accumulation of endogenous displacing agents (e.g. uraemia)
- Administration of drugs which compete for serum protein binding sites.

If the free fraction increases, the measurement of the total serum concentration will underestimate the amount of free, pharmacologically active drug, and under these circumstances therapeutic and toxic effects will be observed at total drug concentrations which are within the normal reference range.

Because phenytoin and valproic acid are highly protein bound and consequently susceptible to variable binding, free concentrations are most commonly monitored for these drugs.

TDM during pregnancy

Free and total drug determination together with frequent sampling will contribute to safer epilepsy treatment during pregnancy. Benefits have been recognised already for lamotrigine treatment. Free drug determination is available for some of the ASMs. Please refer to the list in the following saliva section.

Saliva as an alternative matrix

Saliva is a matrix of increasing utility and is an alternative matrix to serum but only for some ASMs. We can test for the following:

- | | |
|--------------------------------------|--|
| • Carbamazepine | • Levetiracetam |
| • Carbamazepine epoxide (metabolite) | • 10-hydroxycarbamazepine (oxcarbazepine metabolite) |
| • Cenobamate | • Phenobarbital |
| • Clobazam | • Phenytoin |
| • Desmethyl clobazam (metabolite) | • Pregabalin |
| • Clonazepam | • Primidone |
| • Ethosuximide | • Topiramate |
| • Felbamate | • Valproic acid |
| • Gabapentin | • Vigabatrin |
| • Lacosamide | • Zonisamide |
| • Lamotrigine | |

For most ASMs, measured concentrations reflect the free concentration in blood. To minimise contamination from drug residues, saliva sampling is best done before the next dose or after a few hours have elapsed since drug ingestion.

Saliva sampling is convenient, painless, and a non-invasive alternative for both paediatric and elderly patients allowing remote/at-home sampling by patients themselves.

Saliva testing kits can be sent directly to the patient's home, including clear instructions and a prepaid return envelope for the sample to be sent back to us.