

The Cellmark logo consists of the word "Cellmark" in a clean, sans-serif font, followed by a stylized graphic element: a thin, curved line that starts above the 'k' and ends with a small blue square at the tip.

Cellmark

A close-up photograph of a cannabis plant, showing several serrated leaves and a central bud. The lighting is warm and golden, suggesting a sunset or sunrise, which creates a soft glow over the plant's intricate details.

DRUG &  
ALCOHOL TESTING  
YOUR QUESTIONS  
ANSWERED

Need some advice on testing?  
Call us free on: 0800 036 2522

## Cellmark's Hair Testing Service

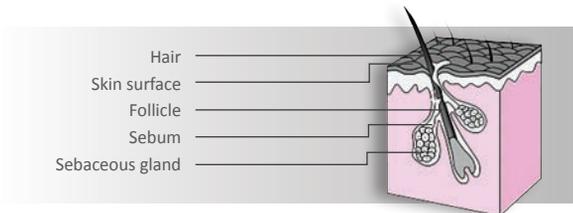
Cellmark's ISO17025 accredited hair drug & alcohol testing service provides rapid, reliable scientific analysis which is clearly reported and simply explained.

We are also one of the largest suppliers of forensic analysis to the police and the UK's leading DNA paternity tester with 30 years' experience of delivering market leading scientific testing to the general public, the legal community and the courts. We bring the same level of scientific rigour, chain of custody management and excellent customer support to all the services we provide – reliable quality from the name you can trust.

### What is Hair Testing?

Testing hair samples is a non-invasive method of providing evidence of an individual's history of drug or alcohol use. It can provide a record over a longer period of time (months rather than days) than any other sample type such as blood, urine or oral fluid.

Hair is fed by a blood supply so drugs that are circulating in the bloodstream can become incorporated into the growing hair. Hair can also incorporate chemical substances from sweat or sebum (an oily substance secreted by the sebaceous glands that helps to prevent hair and skin from drying out) or from environmental exposure to smoke or vapour.



Every hair will go through three phases: growth phase (anagen), transitional phase (catagen) and resting phase (telogen). The growth phase can last from 3-7 years, the transitional phase only lasts about 2-4 weeks; and the resting phase can last from 1-4 months during which old hairs are replaced with new ones.

To test for a history of drug taking or excessive alcohol consumption a small hair sample is cut close to the scalp. The hair sample will normally have a selection of hairs in each of the phases of growth and this is taken into account in our analysis.

### Who will take the hair sample?

Cellmark uses a team of professional samplers who visit solicitors' offices and courts to take samples (blood and urine samples for supplementary alcohol marker analysis can be taken at the same time). The samplers are skilled at taking discrete samples and will ensure that the integrity and chain of custody of the sample is maintained.

### How much hair is required?

We just require a sample of hairs about the diameter of a standard drinking straw.



### The process is simple

1. Register your case by calling 0800 036 2522 and speaking with a member of Cellmark's Customer Services team. We are open until 7.00pm on Mondays and until 6.00pm from Tuesday to Friday and can provide immediate quotations and advice.  
  
Alternatively you can register online at [www.cellmark.co.uk](http://www.cellmark.co.uk), or send an email to [info@cellmark.co.uk](mailto:info@cellmark.co.uk).
2. We will arrange a sampling appointment for your client(s) with one of our professional mobile samplers. They will visit your office (or another agreed location) to take the sample(s) at a time that is convenient for you and your client.
3. The hair sample(s) and paperwork will be sent to Cellmark's laboratory in Oxfordshire for testing (any blood or urine samples for supplementary alcohol marker analysis will be sent to our partner laboratory).
4. Within 3-5 working days the test report will be dispatched to you by email or first class post.

# Hair Testing for Drugs

## Step 1: Select the drugs you want Cellmark to test for?

Cellmark tests for more than 25 common 'drugs of abuse' and drug metabolites (breakdown products) which make up the two panels we offer.

### Panel A:

- Amphetamine and methamphetamines - including MDMA (ecstasy).
- Benzodiazepines - including diazepam, desmethyldiazepam (nordiazepam), temazepam, oxazepam and chlordiazepoxide.
- Cannabis, also available as a single drug.
- Cocaine - including markers to indicate the use of 'crack' cocaine and the concurrent use of cocaine and alcohol. Also available as a single drug.
- Mephedrone.
- Methadone.
- Opiates – including morphine, codeine, dihydrocodeine, heroin and markers of heroin use.

### Panel B:

- Ketamine.
- LSD.
- Phencyclidine (PCP).

Our service is designed to comply with the legal aid funding guidelines and is simple and economic.

Simply select the type of hair to be sampled (head/body) and the drug or drug panel/s required. If you require analysis of a drug that is not listed, please call Customer Services Drug testing team on 0800 036 2522 to discuss.

We will give you an immediate quote over the telephone and if you want to go ahead we will take all your details there and then to avoid any delays.



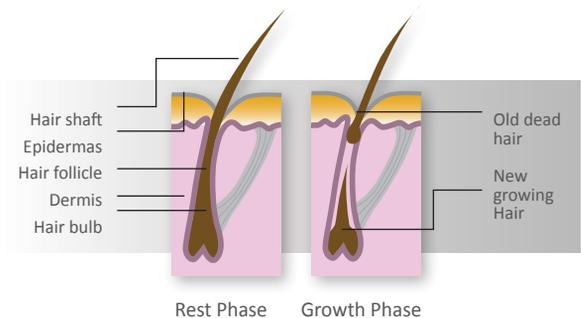
## Step 2: Select the period of time you want to be analysed

Head hair grows at an average rate of approximately one centimetre (cm) per month with a range of between approximately 0.7 and 1.5cm per month. At Cellmark we assume a growth rate of 1cm per month for our calculations when determining a history of use.

You can ask us to analyse either a single section of head hair, or multiple 'sections'. A single section provides an overview for that period of time and can be between 1 and 3cm (ie one, two or three month periods) to demonstrate patterns of drug use or abstinence over a period of time. The number of sections that can be tested will be dependent upon the length of sample available.

## How soon after use can a drug be detected in hair?

It is estimated to take approximately 5-7 days from the time of drug use or exposure for head hair containing the drug markers to grow above the scalp and be available for cutting and analysis. It is recommended to wait at least three to four weeks following the suspected use of a drug before collection of a sample so that the period of use/exposure is included in the collected sample.



## Does body hair give the same type of results as head hair?

Body hair has a similar rate of growth as head hair, with a range of between approximately 0.9 and 1.1cm per month, but it has a different pattern of growth and resting phases. It has been estimated that body hair has a much higher proportion, approximately 40% - 60%, in the resting phase compared to only 10% - 15% for head hair.

As a consequence body hair samples are not divided into sections for analysis and any use of, or exposure to a detected drug may have been in the weeks prior to the sample collection or many months earlier than this.

## Chronic Alcohol Consumption

### Hair Testing: EtG and FAEE

Cellmark analyses for chronic alcohol consumption (defined as an average consumption of 60 grams of pure alcohol per day (7.5 units) over several months) by testing for breakdown products of alcohol which are incorporated into hair, specifically EtG and FAEEs.

- Ethyl glucuronide (EtG) is a product of alcohol degradation in the liver and is incorporated into hair via blood vessels supplying the hair follicle and also from sweat.
- Fatty acid ethyl esters (FAEEs): ethyl palmitate, ethyl myristate, ethyl oleate and ethyl stearate are formed by enzymes in blood and tissues after alcohol consumption. FAEEs are incorporated into the hair via the blood as well as from the oily sebum produced by the body's sebaceous glands. Ethyl palmitate is the primary marker used to indicate alcohol consumption.

Higher levels of these markers indicate that more alcohol has been consumed. However, since the levels of these 'direct' markers of alcohol consumption can be influenced by a number of factors including cosmetic treatments and thermal hair straightening tools, it is recommended that the results should not be used in isolation but should be considered alongside other tests and factors in the case.

### Determining chronic excessive use

Cellmark uses published, validated cut-off levels for the detection of EtG and FAEEs which are internationally accepted and recommended by the Society of Hair Testing.

A result above these cut-off levels is strongly suggestive of chronic excessive alcohol use. Below these levels the results are more consistent with normal social drinking and may be used to corroborate a claim of abstinence. However it is never possible to rule out one-off alcohol use or occasional binge drinking.

EtG is the most reliable alcohol marker in hair but a combination of tests is recommended. Cellmark does not offer FAEE testing on its own since low levels of FAEEs can be found in the hair of teetotallers and can therefore give a false positive.

Cellmark concurs with the Society of Hair Testing consensus (revised in 2016) which recommends that testing for EtG and FAEEs (together) should be used as part of an overall case assessment. Cellmark also offers blood and urine tests which look for other 'indirect' indicators of alcohol consumption (see opposite).

A separate hair sample (minimum 3cm) will be required for alcohol analysis. We only offer an overview analysis (not month by month) to ensure the reliability of the interpretation and do not recommend body hair for the same reason.

### Combined blood testing: CDT and LFT

Carbohydrate deficient transferrin (CDT): transferrin is a protein in blood which is affected by alcohol consumption. A period of excessive alcohol consumption leads to an increase in the level of CDT. Levels revert to normal after several weeks of abstinence so it only provides an indication of consumption in the two weeks prior to sampling.

Liver Function Testing (LFT) looks at markers within the blood to check how the liver is performing; gamma-GT (GGT), alanine aminotransferase (ALT) and aspartate aminotransferase (AST). Excessive consumption of alcohol will affect liver function and produce raised levels of several these markers. Please note that various medical conditions and treatments can also affect liver function.

### Urine Testing: EtG and EtS

Ethyl Glucuronide (EtG) and Ethyl Sulfate (EtS) are both breakdown products produced by the body after the consumption of alcohol. Urine testing for EtG and EtS will detect alcohol use up to approximately 80 hours after drinking ie recent use. However on its own, urine testing is not indicative of chronic excessive consumption.

We have a simple staged pricing structure for chronic alcohol testing:

- Price A: EtG testing on its own in hair
- Price B: EtG and FAEE in hair
- Price C: Blood alcohol markers with a hair test
- Price D: Blood and Urine markers together with a hair test

Finally we would always advise that a clinical assessment by a medical professional is also undertaken.

Please see our website [www.cellmark.co.uk](http://www.cellmark.co.uk) for full details of the hair & alcohol services offered by Cellmark, or call us for advice on: FREEPHONE: 0800 036 2522





ACCURATE



RECOMMENDED



CONFIDENTIAL



CONVENIENT



ACCREDITED

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