



## Are they drinking?

Strong indicator of ethanol (alcohol) ingestion; ideal for monitoring alcohol abstinence or relapse treatment. *We'll find out.*

ENSURE YOUR PROGRAM FEATURES THE MOST ACCURATE ALCOHOL MONITORING TEST AVAILABLE.

EtG is a direct metabolite of alcohol (ethanol). Its presence in urine may be used to detect recent ethanol ingestion, even after ethanol is no longer measurable. The presence of EtG in urine is an indicator that ethanol was ingested and can be detected in urine for up to 80 hours after ingestion. EtG is only evident when ethanol is ingested and is not produced as a result of fermentation.

In addition to EtG, recent scientific studies have identified ethyl sulfate (EtS) as a second specific metabolite or biomarker of ethanol. For this reason, RTL tests and reports EtS, in conjunction with EtG, to confirm recent ethanol ingestion or exposure.

RTL utilizes the most sophisticated, sensitive, and specific equipment and technology available. After first screening for presumptive positives, we quantitatively confirm EtG/EtS by LC/MS/MS (liquid chromatography/mass spectrometry/mass spectrometry). This combination of separate screening and confirmation methods provides highly accurate alcohol biomarker test results.

### FEATURES AND BENEFITS

- *Detects recent ingestion more accurately and for a longer period of time than standard alcohol tests*
- *Provides greater sensitivity and accuracy by measuring both EtG/EtS*
- *Ideal for zero tolerance treatment programs and abstinence enforcement*
- *EtG/EtS tests may be run conveniently with other RTL drug screens*
- *Fast results (48 hours<sup>1</sup> negative, 48-72 hours positive)*

Start testing for EtG/EtS

**800-255-2159**

or visit: [www.redwoodtoxicology.com](http://www.redwoodtoxicology.com)



## FREQUENTLY ASKED QUESTIONS

Complete list of FAQs available online at [www.redwoodtoxicology.com](http://www.redwoodtoxicology.com)

### What is Ethyl Glucuronide?

Ethyl glucuronide (EtG) is a direct metabolite of alcohol (ethanol). Its presence in urine may be used to detect recent ethanol ingestion, even after ethanol is no longer measurable. The presence of EtG in urine is an indicator that ethanol was ingested.

### What is Ethyl Sulfate?

In addition to EtG, recent scientific studies have identified ethyl sulfate (EtS) as a second specific metabolite or biomarker of ethanol. For this reason, RTL tests and reports EtS, in conjunction with EtG, to confirm recent ethanol ingestion or exposure. The detection of EtG and EtS offers greater sensitivity and accuracy for determination of recent ethanol ingestion, than by detection of either biomarker alone.

### How long can EtG/EtS be detected in urine?

Traditional laboratory methods detect the actual alcohol in the body, which reflects current use within the past few hours (depending on how much is ingested). The presence of EtG/EtS in urine indicates that ethanol was ingested within the previous 3 to 4 days, or approximately 80 hours after ethanol has been ingested. Therefore, EtG/EtS is a more accurate indicator of the recent ingestion of ethanol than measuring for the presence of ethanol itself.

### How accurate and reliable is the EtG/EtS test?

EtG/EtS are direct metabolites of alcohol (ethanol), and their detection in urine is highly specific, similar to testing for other drugs. Add to this, RTL utilizes the most sophisticated, sensitive, and specific equipment and technology available. After initial screening for suspect positives, we quantitatively confirm EtG and EtS by LC/MS/MS (liquid chromatography/tandem mass spectrometry). This combination of three separate methods provides highly accurate alcohol biomarker test results. As is the case with any laboratory test, it is also very important to obtain clinical correlation.

### Can residual EtG/EtS be detected in the urine of long-term alcoholics who abstain?

Studies indicate that alcoholics in abstinence have no detectable levels of EtG/EtS in their urine after approximately 80 hours of detoxification.

### What about urine alcohol produced by fermentation?

EtG/EtS is only detected in urine when ethanol is ingested. This is important since it is possible to have ethanol in urine without drinking. Ethanol in urine without drinking is due to the production of ethanol in vitro. Ethanol in vitro is spontaneously produced in the bladder or the specimen container itself, due to fermentation of urine samples containing sugars (diabetes) and yeast or bacteria. Since the ethanol produced is not metabolized by the liver, EtG/EtS will not be produced and will therefore not be detected in a urine containing ethanol as a result of fermentation.

### Why do EtG cut-off values vary at different labs?

Various cut-off levels (100, 250, 500, or 1000 ng/mL) are suggested for use in EtG testing. Any EtG level over 100 ng/mL and EtS level over 25 ng/mL indicates exposure to ethanol. In order to provide alcohol abstinence programs with the most clinically relevant answer to whether or

not recent ethanol ingestion has occurred, using a 100 ng/mL cut-off for EtG and a 25 ng/mL cut-off for EtS detection is the best and most definitive test available to answer this question. RTL uses a 100 ng/mL EtG cut-off level and a 25 ng/mL EtS cut-off level.

### What does a positive EtG test above 100 ng/mL and an EtS above 25 ng/mL mean?

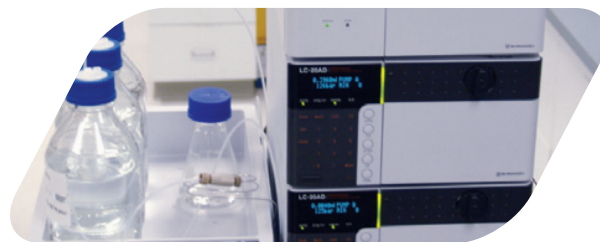
A positive EtG test above 100 ng/mL and an EtS above 25 ng/mL indicates recent ethanol ingestion. The only way you can have EtG/EtS in the urine is if ethanol is in your body. In addition, using a 100/25 ng/mL cut-off nearly doubles the time of detection of recent ethanol detection versus the use of a 250 ng/mL EtG cut-off. In summary, the 100/25 ng/mL EtG/EtS cut-off is superior for monitoring purposes, and provides the most sensitive and definitive indicator of recent ethanol ingestion.

EtG Cut-off	Abuse Episodes Detected
1000 ng/mL	~80 – 90%
500 ng/mL	~90%
250 ng/mL	~98%
100 ng/mL	~99%

### Will the use of incidental alcohol, such as mouthwash and Over-the-Counter (OTC) cough syrups trigger a positive result?

Tests show that “incidental exposure” to the chronic use of food products (vanilla extract), hygiene products, mouthwash, or OTC medications (cough syrups), which contain ethanol, can produce EtG concentrations in excess of 100 ng/mL. However, if measurable ethanol is detected (>.04 gm %) in the urine, and EtG is detected in excess of 100 ng/mL and EtS is also detected in excess of 25 ng/mL, then this is very strong evidence that beverage alcohol was ingested.

Most alcohol abstinence programs require an agreement to avoid all products containing alcohol, including: mouthwash, Nyquil®, OTC medications, etc. Consumption of these products could produce a positive test for alcohol and/or EtG/EtS and would thus violate the agreement.



1. Excludes specimens received Saturday