

# Therapeutic Drug Monitoring (TDM)

Chromatography kits for GC, GC/MS, HPLC and LC-MS/MS methods



a **SENTINEL** DIAGNOSTICS  
Company

# Therapeutic Drug Monitoring (TDM)

More informations available at [www.eurekakit.com](http://www.eurekakit.com)



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Pharmacological treatments and their side effects can have an impact on the patients' safety or quality of life. Specifically, the so called ADME (absorption, distribution, metabolism, and excretion) of the drug can be highly influenced by genetics, environment and administration of other drugs due to co-morbidities. Therefore, in some cases the treatment with a fixed drug dose can be hazardous to patients' health.

For this reason, the management of a drug therapy which is optimized for a specific case is necessary. In some cases, this can be needed for drugs that present a narrow therapeutic range, which can be easily exceeded causing toxic effects and/or increasing drug-drug interactions (DDIs) (Tuzimski, et al. 2020\_review).

Alternatively, if the drug concentration is lower than the safety range, the pharmacological activity might not occur. In the light of this, Therapeutic Drug Monitoring (TDM) is a strategic way to "adjust" the treatment and the dose based on patient's clinical case (Kuhlin, et al. Clinms\_2018). In clinical practice, several matrices can be used for TDM: whole blood, serum, plasma, dried blood spots, oral fluid (Tuzimski, et al. 2020\_review).

### LC-MS/MS

#### Serum

- Benzodiazepines

#### Plasma

- Antibiotics
- Antiepileptics
- Antimycotics
- Antituberculosis Drugs
- Ponatinib
- Tamoxifen, Endoxifen

#### Serum/Plasma

- Antiarrhythmics
- Antidepressants
- Antiepileptics
- Antipsychotics
- Irinotecan and 7-Ethyl-10-Hydroxycamptothecin (SN38)

#### Whole blood

- Immunosuppressants

#### Whole blood/Plasma

- Immunosuppressants DUAL KIT (+ Mycophenolic acid)

#### Ex vivo determination in PBMC

- 5-Fluorouracil

### HPLC

#### Serum

- Metformin

#### Plasma

- Antiarrhythmics
- Antibiotics
- Antimycotics
- Levetiracetam
- Perampanel
- Sotalol
- Topiramate
- Valproic Acid

#### Serum/Plasma

- Amiodarone/Desethylamiodarone
- Antiepileptics
- Benzodiazepines
- Clozapine and Norclozapine
- Lamotrigine
- Lamotrigine and 10, 11-Dihydro-10-Hydroxycarbazepine
- Mycophenolic Acid
- Tricyclic Antidepressants

### All kits have the following benefits:

- Ready to use and CE/IVD marked
- Simple, non-critical and rapid preparative phase
- Maximum specificity
- Recovery of analytes ranges from 90% to 100%



# Forensic Toxicology

Chromatography kits for GC, GC/MS,  
HPLC and LC-MS/MS methods



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## LC-MS/MS

### Urine

- Drugs of abuse
- Ethylglucuronide and ethylsulfate
- Benzodiazepines and barbiturates

### Whole blood

- Drugs of abuse

### Hair

- Drugs of abuse
- $\Delta$ -9-THC and  $\Delta$ 9-THC-COOH
- Ethylglucuronide

### Saliva

- Drugs of abuse

### Urine/Hair - Whole blood

- Fast Screening Kit of 1st level for labelled Drugs of Abuse

### Plasma/Whole blood

- Fast Toxicological Screening kit

### Urine - Urine/Plasma - Whole blood

- Fast Toxicological Screening kit

### Oleolites

- Phytocannabinoids for Therapeutic use

### Other matrices

- Illicit substances on unknown confiscated samples

## GC - GC/MS

### Urine

- Benzoylcegonine, Cocaethylene and cocaine
- Amphetamines
- Methadone and EDDP
- Norbuprenorphine and Buprenorphine
- Opiates
- $\Delta$ 9-tetrahydrocannabinol-COOH (THC)

### Whole blood

- Basic Drugs of abuse
- Amphetamines
- Ethanol
- Cannabinoids

### Hair

- Drugs of abuse
- $\Delta$ -9-THC

### Oleolites

- Phytocannabinoids for Therapeutic use

## HPLC

- CDT TEST in serum by UV-FAST monoreagent

## All kits have the following benefits:

- Ready to use and CE/IVD marked
- Simple, non-critical and rapid preparative phase
- Maximum specificity
- Recovery of analytes ranges from 90% to 100%



# Occupational Toxicology

Chromatography kits for GC, GC/MS,  
HPLC and LC-MS/MS methods



**eureka**  
Lab Division

a **SENTINEL DIAGNOSTICS**  
Company

# Occupational Toxicology

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Chromatography kits for GC, GC/MS, HPLC and LC-MS/MS methods

## GC, GC/MS

### Urine

- Acetates
- Butyl Acetate
- Butyl Alcohol
- Carbonium Tetrachloride
- Diethylketone
- Ethyl Acetate
- Formic Acid
- Isobutyl Acetate
- Isobutyl Alcohol
- Isopropyl Alcohol
- Methyl Acetate
- Methylene Chloride (Dichloromethane)
- Methyl-Isobutylketone
- Methyltrichloroacetate
- N-Methylacetamide and N-Methylformamide
- Propyl Alcohol
- Tetrachloroethylene
- Trans-1,2-Cyclohexanediol
- Trichloroacetic Acid
- Trichloroethane
- Trichloroethanol
- Trichloroethylene
- Volatile Organic Compounds (VOC)

### Whole blood

- Volatile Organic Compounds (VOC)

## LC-MS/MS

### Urine

- Muconic Acid and S-Phenylmercapturic Acid

## HPLC

### Urine

- 1-Hydroxypyrene
- Acetone
- Free 2,5 Hexanedione
- Total 2,5 Hexanedione
- Hippuric Acid/o-m-p- Methylhippuric Acids
- Methanol
- Methyl-Ethyl-Keton (MEK)
- o-Cresol and Phenol
- Phenylglyoxilic Acid/Mandelic Acid
- Phenylglyoxilic/Mandelic/Hippuric/  
o-m-p-Methylhippuric Acids
- S-phenylmercapturic Acid
- Trans, trans-Muconic Acid (#MA)

### Whole blood

- Free Eritrocitary Protoporphyrin IX and ZnPP

## All kits have the following benefits:

- Ready to use and CE/IVD marked
- Simple preparative phase
- Maximum specificity
- Recovery of analytes ranges from 90% to 100%
- Stable for 3 years after production
- Accurate, reproducible and quick results



# Special Clinical Chemistry

Chromatography kits for GC, GC/MS,  
HPLC and LC-MS/MS methods



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# Special Clinical Chemistry

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## LC-MS/MS

### Urine

- Cortisol and Cortisone
- Catecholamines/Metanephrines
- VMA, 5-HIAA and HVA
- Steroid hormones

### Plasma

- 25-OH Vitamin D3 and 25-OH Vitamin D2
- Catecholamines/Metanephrine
- Free Metanephrine (Extractive Method)
- Homocysteine
- TMAO

### Serum/Plasma

- Steroid Hormones

### Saliva

- Cortisol and Cortisone

## GC - GC/MS

### Plasma

- Differentiated Fatty Acids

## TDM

### Wide range of kits available

- See the specific leaflet

## HPLC

### Urine

- 3-Methylindole (Skatole)
- Citrates
- Differentiated Porphyrins
- Free Catecholamines
- Total Metanephrines
- Free VMA/5-HIAA/HVA
- Hydroxyproline
- Indican
- Oxalates
- Pyridinium Cross-Links
- Serotonin

### Plasma

- 25-OH-Vitamin D3 and D2
- 3-Nitrotyrosine
- Beta-Carotene
- Coenzyme Q-10
- Free Catecholamines
- Homocysteine
- Vitamin C
- Vitamins A / E

### Whole blood

- Vitamin B1
- Vitamin B2
- Vitamin B6
- Vitamin B1 and Vitamin B6
- Free Eritrocitary Protoporphyrin IX and ZnPP
- Glutathione

### Plasma/Urine

- DUAL Kit Catecholamines

### Serum/Plasma

- ADMA

### Serum

- Citrates
- Serotonin

### Serum/Urine

- Citrates - DUAL KIT

## All kits have the following benefits:

- Ready to use and CE/IVD marked
- Simple, non-critical and rapid preparative phase
- Maximum specificity
- Recovery of analytes ranges from 90% to 100% (HPLC, GC,GC/MS) and close to 100% (LC/MS)

