

# Therapeutic Drug Monitoring (TDM)

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



a **SENTINEL** DIAGNOSTICS  
Company

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

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%

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