Drug Metabolism Pharmacokinetic (DMPK) cards

QIAcard® FTA® DMPK cards offer a reliable and cost-effective sample collection technique for analyzing pharmacokinetics in clinical studies, global health surveillance programs and forensic applications. Simply apply a small sample of blood or other biofluid directly to the DMPK card and allow it to dry at room temperature – the sample is then stabilized on the card for later use. For downstream analyses, such as HPLC and MS/MS, a small disc can be punched out of the card to extract drugs and metabolites.

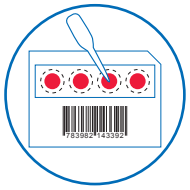
Pharmacokinetic studies provide insight into the way drugs behave in the bodies of humans and animals, including their uptake, biotransformations, the distribution of the drugs and their metabolites in the tissues and the elimination of the drugs and their metabolites from the body over time.

- Microvolume sampling requires just 10 to 20 µl per sample.
- Simple room temperature collection, storage and transport of blood and other biofluid specimens.
- Detection of harmful byproducts (metabolites), dangerous exposure levels (toxicity) or active substances even in postmortem samples.
- Easy serial sampling from individual animals and straightforward extraction for highly consistent data.

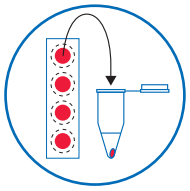
Choose the right card

Card choice is dictated by a combination of handling and performance criteria. Handling requirements may be influenced by operational or safety considerations, while performance depends on many factors such as the analyte chemical structure, extraction solvent and analysis workflow, which are usually determined empirically.

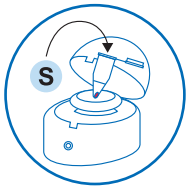
Sample analysis procedure:



Spot 15 µl of biofluid onto the QIAcard FTA DMPK Card and dry thoroughly for 2–3 h



Transfer 3.00 mm punch from the sample area into a labelled tube



Add 100 µl of HPLC-grade methanol (S) into the same tube and vortex for 10 min

Centrifuge briefly for 3 min then remove the punched spot sample

Transfer the supernatant to a clean vial and analyze by HPLC-MS/MS or immunoassay

Note: Fully automated solutions available using flow-through desorption/FTD™.

DMPK-A

Features

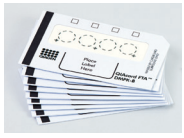
- Chemical impregnation differs from DMPK-B cards
- Protein denaturation and enzyme inactivation
- Endogenous cellular material released by cell lysis
- DNA stabilization allows resampling of blood spots

Examples

Acetaminophen[1] (Paracetamol)
Acetyl salicylic acid[2] (Aspirin)
Diazepam[3] (Valium)
Metoprolol[4] (Lopressor)
Naproxen[5] (Aleve)
Nifedipine[6] (Adalat)
Omeprazole[6] (Prilosec)
Tacrolimus[7] (Prograf)
Tamoxifen[8] (Nolvadex)
Valsartan[9] (Diovan)

DMPK-B

Features



- Chemical impregnation differs from DMPK-C cards
- Protein denaturation and enzyme inactivation
- Endogenous cellular material released by cell lysis
- DNA stabilization allows resampling of blood spots

Examples

Acetaminophen[1] (Paracetamol)
Caffeine[10] (Coffee)
Cyclosporin A[11] (Neoral)
Dexamethasone[12] (Dexasone)
Dextromethorphan[13] (Vicks/CoughGels)
Dextrorphan[13] (Vicks/CoughGels)
Diazepam[3] (Valium)
Fluconazole[14] (Diflucan)
Gabapentin[15] (Neurontin)
Metformin[16] (Glucophage)

DMPK-C

Features

- No impregnated chemicals to interfere with analysis
- Proteins are not denatured so cards may be better suited for analyzing protein-based biomolecules
- DNA stabilization allows resampling of blood spots

Examples

Apalutamide[17] (Erleada)
Creatinine[18] (naturally occurring)
E6005[19] (PDE4 Inhibitor)
Exendin-4[20] (Byetta)
Hydroxyurea[21] (Hydrea/Droxia)
Ketoprofen[22] (Oruvail)
Monoclonal antibodies[23] (147-150kDa)
Rimegepant[24] (Nurtec ODT)
Topiramate[25] (Topamax)
Zolpidem[3] (Ambien)

Note: The above-listed compounds are examples of detectable compounds without any claim to comprehensiveness.

Learn more about our QIAcard FTA DMPK cards, including instructions for use.
Visit **www.qiagen.com/products/human-id-and-forensics/**

For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual. QIAGEN kit handbooks and user manuals are available at www.qiagen.com or can be requested from QIAGEN Technical Services or your local distributor.

Ordering Information

Product	Pack size	Cat. no.
QIAcard FTA DMPK-A	100	WB129241
QIAcard FTA DMPK-B	100	WB129242
QIAcard FTA DMPK-C	100	WB129243
Indicating Desiccant Pack	1000 x 1g	WB100003
Multi-Barrier Pouches (4" x 4.5")	100	WB100092
Multi Barrier Pouch/Clear (7" x 7.37")	100	WB100024
UniCore Punches 1.00/1.20/2.00 mm	25 pieces	WB100073/WB100074/WB100076
UniCore Punch Kit 3.00/6.00 mm	4 (including 2 cutting mats)	WB100039/WB100040
Cutting Mat (2.5" x 3.0")	1	WB100088
Cutting Mat (6" x 8")	1	WB100020

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