

# MDR1

# SPOT ON INFINITI™


*The Automated Multiplexing MDx Solution*



## Product Design

- ▶ The INFINITI™ MDR1 Assay is designed to identify patients with select genetic variants of MDR1.
- ▶ The INFINITI MDR1 Assay utilizes the MDR1 Intellipac™, MDR1 Amp Mix and MDR1 BioFilmChip™ Microarray.
- ▶ The INFINITI MDR1 Assay is automated by the 510(k) cleared INFINITI Analyzer.
- ▶ Clinical validation is currently in progress.

## Benefits

	VERSATILITY	◆	Multiplexed determination of 6 genetic variants on one BioFilmChip Microarray
	EFFICIENCY	◆	Rapid turnaround time enhances workflow efficiency
	AGILITY	◆	<i>Load N Go</i> automation with the INFINITI Analyzer
	INTEGRITY	◆	Replicate determinations on a single BioFilmChip Microarray ensure quality results

## Genetic Variants

MDR1 -1, 61, 1199, 1236, 2677, and 3435

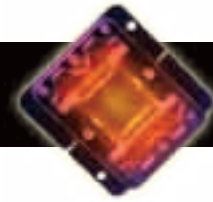
## Sample Type and Volume

0.2 – 2.0 ml of peripheral whole blood in EDTA (purple-top) tube  
50 ng DNA / reaction

## Product Information

Product No.	Product Name	Description	Pack Size
03 108	INFINITI MDR1 BioFilmChip	12 BioFilmChips / Magazine	4 Magazines / pack
03 208	INFINITI MDR1 Intellipac	24 tests / IntelliPac	2 Intellipacs / pack
03 308	INFINITI MDR1 Amp Mix	250 µl / vial	4 vials / pack

Please contact AutoGenomics to obtain product information and for product status updates.



### Clinical Relevance<sup>1</sup>

- ▶ “MDR1 (Multi-Drug Resistance gene) encodes P-glycoprotein that has broad substrate specificity, including a variety of structurally divergent drugs in clinical use today.”
- ▶ “Expression of this efflux transporter in certain tissue compartments, such as the gastrointestinal tract and brain capillary endothelial cells, may affect central nervous system entry of many drugs.”
- ▶ As a result of polymorphisms in MDR1, the lack of homogeneity within diverse ethnic populations may result in adverse drug events, including overdosing.

### Clinical Utility

- ▶ Two polymorphisms, at amino acids 2677 and 3435, produce a protein with lower digoxin transport activity. In the intestine, these polymorphisms cause increased bioavailability, and in the kidney they cause decreased excretion of digoxin.<sup>1</sup>
- ▶ Polymorphisms at 2677 and 3435 together lead to increased exposure to digoxin with standard dosing.<sup>1</sup>
- ▶ “Kurata et al found the bioavailabilities of digoxin in wild-type and homozygous variant subjects were significantly different at  $67.6\% \pm 4.3\%$  and  $87.1\% \pm 8.4\%$ , respectively.”<sup>2</sup>
- ▶ “The MDR1 variants were also associated with differences in disposition kinetics of digoxin, with the renal clearance almost 32% lower in homozygous variant subjects ( $1.9 \pm 0.1$  ml/min/kg) than in subjects with the wild-type genotype ( $2.8 \pm 0.3$  ml/min/kg), and in heterozygous subjects having an intermediate clearance value ( $2.1 \pm 0.6$  ml/min/kg).”<sup>2</sup>

### References

1. Marzolini C, Paus E, Buclin T, Kim RB. Polymorphisms in human MDR1 (P-glycoprotein): recent advances and clinical relevance. *Clin Pharmacol Ther* 2004;75:13-33
2. Bonny L, Bukaveckas, PhD. Adding Pharmacogenetics to the Clinical Laboratory: Narrow Therapeutic Index Medications as a Place to Start