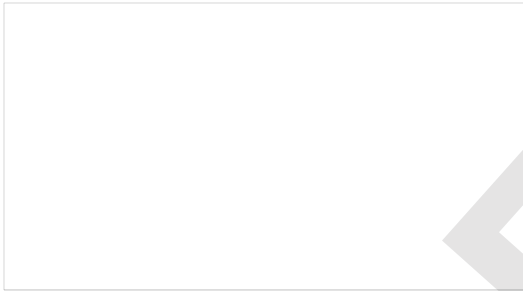


PhenoSENSE GT™

REPLICATION CAPACITY
COMBINATION HIV DRUG RESISTANCE ASSAY



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Patient Name:	DOB	Patient ID/Medical Record #	Gender	Monogram Accession # 09-107355
Date Collected	Date Received	Date Reported	Mode	Report Status
			Reference Lab ID/Order #	
Comments			HIV-1 Subtype: B	

	DRUG		PHENOSENSE™ SUSCEPTIBILITY				Evidence of Susceptibility		Net Assessment	
	Generic Name	Brand Name	Cutoffs (Lower - Upper)	Fold Change	Increasing Drug Susceptibility	Decreasing	Pheno Sense	Gene Seq		
NRTI	Abacavir	Ziagen	(4.5 - 6.5)	2.66			Y	Y	Sensitive	
	Didanosine	Videx	(1.3 - 2.2)	1.35			P	Y	Partially Sensitive	19
	Emtricitabine	Emtriva	(3.5)	>MAX			N	N	Resistant	
	Lamivudine	Epivir	(3.5)	>MAX			N	N	Resistant	
	Stavudine	Zerit	(1.7)	0.79			Y	Y	Sensitive	3
	Zidovudine	Retrovir	(1.9)	0.27			Y	Y	Sensitive	3
	Tenofovir	Viread	(1.4 - 4)	0.38			Y	Y	Sensitive	3
	NRTI Mutations		M184M/I/V							
NNRTI	Delavirdine	Rescriptor	(6.2)	4.87			Y	N	Sensitive	13,22
	Efavirenz	Sustiva	(3)	4.42			N	N	Resistant	
	Etravirine	Intelence	(2.9 - 10)	0.40			Y	Y	Sensitive	
	Nevirapine	Viramune	(4.5)	6.14			N	N	Resistant	
NNRTI Mutations		K103N								
PI	Atazanavir	Reyataz	(2.2)	0.82			Y	Y	Sensitive	
		Reyataz / r †	(5.2)	0.82			Y	Y	Sensitive	
	Darunavir	Prezista / r †	(10 - 90)	0.44			Y	Y	Sensitive	
	Fosamprenavir	Lexiva	(2)	0.50			Y	Y	Sensitive	
		Lexiva / r †	(4 - 11)	0.50			Y	Y	Sensitive	
	Indinavir	Crixivan / r †	(10)	0.67			Y	Y	Sensitive	
	Lopinavir	Kaletra	(9 - 55)	0.53			Y	Y	Sensitive	
	Nelfinavir	Viracept	(3.6)	1.01			Y	Y	Sensitive	
	Ritonavir	Norvir	(2.5)	0.57			Y	Y	Sensitive	
	Saquinavir	Invirase	(1.7)	0.62			Y	Y	Sensitive	
	Invirase / r †	(2.3 - 12)	0.62			Y	Y	Sensitive		
Tipranavir	Aptivus / r †	(2 - 8)	0.67			Y	Y	Sensitive		
PI Mutations		L63P, V77I, L89L/M								

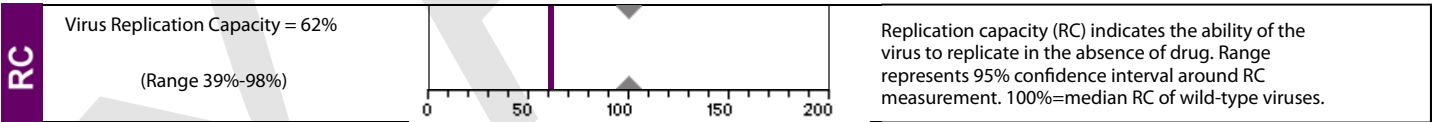
Lower Clinical Cutoff (in bold)
 Hypersusceptibility Cutoff
 Sensitive
 Partially Sensitive
 Resistant
 Y Evidence of Drug Sensitivity
 P Evidence of Partial Drug Sensitivity
 N Evidence of Drug Resistance

For more information on interpreting this report, please visit www.MonogramHIV.com or call Customer Service at 800-777-0177 between the hours of 6:30am to 5:00pm PST Monday through Friday.

Patient Name: _____ Date Collected: 02/02/2009 11:50 _____ Monogram Acc#: 09-107355

Combination Phenotype/Genotype Net Assessment

	SENSITIVE	PARTIALLY SENSITIVE	RESISTANT
NRTI	Abacavir Stavudine Tenofovir Zidovudine	Didanosine	Emtricitabine Lamivudine
NNRTI	Delavirdine Etravirine		Efavirenz Nevirapine
PI	Atazanavir Atazanavir / r Darunavir / r Fosamprenavir Fosamprenavir / r Indinavir / r Lopinavir / r Nelfinavir Ritonavir Saquinavir Saquinavir / r Tipranavir / r		



WORKSHEET	Date of Patient Visit:	Notes/Comments:
	Current Regimen:	
	Viral Load:	New Regimen:
	CD4 Count:	

Patient Name: _____ Date Collected: 02/02/2009 11:50 _____ Monogram Acc#: 09-107355 _____

Complete List of Mutations Detected

RT : K32E, V35I, Q102K, K103N, I135R, C162S, S163S/T, D177N, M184M/I/V, G 196E, T200A, Q207G, R277K
 PR : T12A/S, K14K/R, I15I/V, R41K, L63P, V77I, L89L/M, I93L

Important Definitions

IC50: Concentration of drug required to inhibit viral replication by 50%.

$$\text{Fold Change} = \frac{\text{IC50 patient}}{\text{IC50 reference}}$$

Clinical Cutoffs : Lower clinical cutoff denotes the fold change which was the best discriminator of reduced clinical response using drug-specific clinical outcome data. Reduced response was defined by the clinical endpoint for the specific clinical cohort analyzed for each cutoff value. Upper clinical cutoff denotes the fold change above which a clinical response is unlikely (<.5 log reduction in HIV RNA) and which was determined using the same drug-specific clinical cohort data as for the lower clinical cutoff. Biological cutoffs are used for specific antiretrovirals (ZDV, the NNRTIs and specific protease inhibitors when not pharmacokinetically enhanced with ritonavir). These values are defined as the fold change value below which reside 99% of tested wild-type isolates, i.e., those without known drug resistance mutations.

Mixtures are indicated by amino acids separated by a slash.

‡ Boosted PIs: Clinical cutoff and genotypic interpretation algorithms for ritonavir-boosted protease inhibitors derived from individual studies using the following dosages: AMP/r 600mg/100mg BID; ATV/r 300mg/100mg QD; DRV/r 600mg/100mg BID; IDV/r 800mg/200mg BID; SQV/r 1000mg/100mg BID; and TPV/r 500mg/200mg BID.

Patient-Specific Results

Dru gs	ABC	ddl	FTC	3TC	d4T	ZDV	TFV	DLV	EFV	ETR	NVP	ATV	DRV	AMP	IDV	LPV	NFV	RTV	SQV	TPV
IC50 (µM)	3.56	8.42	>100	>300	0.4	0.008	0.339	0.1822	0.0164	0.000697	0.79	0.00208	0.000584	0.0071	0.0063	0.0045	0.0146	0.0227	0.0044	0.0931
Fold Chan ge	2.66	1.35	>MAX	>MAX	0.79	0.27	0.38	4.87	4.42	0.40	6.14	0.82	0.44	0.50	0.67	0.53	1.01	0.57	0.62	0.67

Phenotype / Genotype Comments (clinical significance may vary)

- 3 - IC50 reduced : Phenotypic measurement reflects possible enhanced susceptibility due to M184I or V.
- 13 - NNRTI HS : NRTI resistance may confer increased NNRTI susceptibility or hypersusceptibility (HS).
- 19 - Cross-resistance : Decreased susceptibility may be due to cross-resistance conferred by mutations selected by other drugs in this class.
- 22 - NNRTI GT-R PT-S : Response to NNRTI in the presence of major mutations and phenotypic susceptibility has not been demonstrated.