



Doctor: Dr Yolande Lucire

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**Patient:** Carmichael, David  
C/Lv15,203-233 New South Head  
Edgecliff 2027

**Referred:** 29/09/2009  
**Collected:** 29/09/2009 11:27  
**Tested:** 01/10/2009 17:35

**DOB:** 16/07/1958

**UR/MR No.:**

**Sex:** M

**Lab No:** 4550054

**Reported:** 01/10/2009 17:42

**Status:** Final

**Test:** M-ADP-ACL

Gribbles Pathology - (03) 9538 6777 - 09-7525873

CLINICAL NOTES: 2c19

MOLECULAR BIOLOGY

SPECIMEN: BLOOD

Cytochrome P450 2C9

CYP2C9 Genotype : \*1/\*1

Phenotype Interpretation : Extensive metaboliser

Drugs known to be metabolized by CYP2C9:

Warfarin, glipizide, rosiglitazone.

Assay Notes:

2C9 alleles detected in this assay: \*2, \*3 \*5.

Other rare alleles are known but are not detected in this assay.

PG2-C PG1-W 2D6-W

This request has other tests in progress at the time of reporting

**Reported:** 06/10/2009 16:29

**Status:** Final

**Test:** M-ADP-ACL

Gribbles Pathology - (03) 9538 6777 - 09-7525873

CLINICAL NOTES: 2c19

MOLECULAR BIOLOGY

SPECIMEN: BLOOD

Cytochrome P450 2C19

CYP2C19 Genotype : \*17/\*17

Phenotype Interpretation : Ultra metaboliser

Drugs known to be metabolized by CYP2C19:

Protein pump inhibitors (omeprazole, lansoprazole)  
Anti-epileptics (Phenytoin)  
Antidepressants (citalopram, escitalopram)  
Clopidogrel

Assay Notes:

2C19 alleles detected in this assay: \*2, \*3 \*17.

Other rare alleles are known but are not detected in this assay.

PG2-R PG1-C 2D6-W

This request has other tests in progress at the time of reporting

**Reported:** 07/10/2009 18:17

**Status:** Final

**Test:** M-ADP-ACL

Gribbles Pathology - (03) 9538 6777 - 09-7525873

CLINICAL NOTES: 2c19

MOLECULAR BIOLOGY

CYTOCHROME P450 2D6 GENE TEST

2D6 Genotype: \*1/\*41

Phenotype interpretation: Extensive metaboliser

Notes:

CYP 2D6 alleles tested.

CYP 2D6 \*1,\*2,\*3,\*4,\*5,\*6,\*7,\*8,\*9,\*10,\*17,\*41 and major duplications.

Other rare alleles are known but are not detected in this assay.

Activity of Alleles

Active : \*1,\*2

Partially Active : \*9,\*10,\*17,\*41

Inactive : \*3,\*4,\*5,\*6,\*7,\*8

INTERPRETATION

**Extensive Metaboliser:** Normal phenotypic metabolism. These patients have two active CYP2D6 alleles, or one active and one partially active allele. In general, these patients can receive substrates of the CYP2D6 enzyme using standard dosage procedures.

**Intermediate Metaboliser:** May require lower than average drug doses for optimal therapeutic response, or may have sub-optimal conversion of drug to active form. These patients have one active and one inactive 2D6 allele, or two partially active alleles.

**Poor metaboliser:** May be at risk of drug-induced side effects due to diminished drug elimination (eg various antidepressants), or lack of therapeutic response caused by diminished conversion of the drug to active form (eg tamoxifen, codeine, tramadol). These patients have either no active alleles, or only one partially active allele.

**Ultra metaboliser:** May require higher dosing regimes due to increased rates of drug metabolism. These patients have three or more active alleles due to gene duplication.

## References

- Leon J et al. "Clinical guidelines for psychiatrists for the use of pharmacogenetics testing for CYP450 2D6 and CYP450 2C19" *Psychosomatics* 2006;47:75-85.
- Kirchheiner J et al. "CYP2D6 and CYP2C19 genotype-based dose recommendations for antidepressants: a first step towards subpopulation-specific dosages" *Acta Psychiatr Scand* 2001;104:173-192.
- Brockmoller J et al. "Pharmacogenetic diagnosis of Cytochrome p450 polymorphisms in clinical drug development and in drug treatment." *Pharmacogenetics* 2000;1:125-151.
- Ingelman-Sundberg M "Genetic polymorphisms of Cytochrome p450 2D6 (CYP2D6): clinical consequences, evolutionary aspects, and functional diversity." *Pharmacogenomics J* 2005;5:6-13. Further information can be found at [www.healthscopemolecular.com](http://www.healthscopemolecular.com)

PG2-R PG1-R 2D6-C

All tests on this request have now been completed