

THE ONCOMINE™ PRECISION ASSAY LIQUID BIOPSY

INTRODUCTION

Ampath is a leading provider of comprehensive genetic testing in South Africa. The Oncomine™ Precision Assay (OPANGS) is the latest in a string of state-of-the-art technologies being offered that allows for the simultaneous investigation of several solid tumour malignancies using a singular approach. The Oncomine™ Precision Assay Liquid Biopsy (Mnemonic: **LBPA**) is performed on the Ion Torrent Genexus system and is able to detect the same variants and fusions as the conventional FFPE tissue-based OPANGS. The LBPA will complement the EGFR T790M liquid biopsy (Mnemonic **LBEGFR**).

TABLE 1: COMPARISON OF ONCOMINE™ PRECISION ASSAY AND EGFR T790M LIQUID BIOPSY

	Oncomine™ Precision Assay Liquid Biopsy	EGFR T790M
Mnemonic	LBPA	LBEGFR
Specimen type	Blood	Blood
Container	Cell-free DNA Streck tube (Glass tube with camouflage top)	Cell-free DNA Streck tube (Glass tube with camouflage top)
Volume required	10 ml	10 ml
Transport	No special requirements Room temperature sent to NRL ASAP	No special requirements Room temperature sent to NRL ASAP
Turnaround time*	~10 working days	~10 working days
Price (2023)**	R16 034.20	R6 527.80
Indications	Applicable to all patients with a histologically confirmed malignancy in an attempt to identify treatable and/or treatment-resistant mutations	Investigation for the acquired EGFR T790M variant that is associated with resistance to treatment in patients with non-small cell lung carcinoma



* Once received at the National Reference Laboratory.

** This price is valid until 31 December 2023 and is for upfront payment only. For medical aid reimbursement, medical aid scheme rates apply.

THE ADVANTAGES OF LIQUID BIOPSY

- Minimally invasive.
- Can predict the risk for metastatic relapse or metastatic progression.
- Has the potential to assess tumour evolution and the development of resistance mutations (e.g. EGFR T790M mutation).
- The test can be easily repeated if needed and can be used as often as necessary to monitor the patient's progress.
- Potentially much less costly to perform than a formal tissue biopsy (in the setting of relapse and metastatic disease – particularly when the costs of surgery, anaesthetic, theatre time, ICU, hospitalisation and histologic work-up are taken into consideration).
- Representation of intra-tumoural genetic heterogeneity.

THE ADDITIONAL ADVANTAGES OF THE ONCOMINE™ PRECISION ASSAY LIQUID BIOPSY (LBPA)

- Much greater sensitivity (EGFR variants can be detected at a frequency as low as 0.05% using the Genexus system vs 5% for the EGFR T790M).
- 50-gene DNA/RNA panel that can potentially detect additional targetable or treatment-resistance mutations.
- RNA panel can assess for fusions in the *ALK*, *ROS*, *RET*, *MET* and *NTRK* genes.

Liquid biopsy plays a complementary role in the management of advanced carcinomas and is not recommended in lieu of histological diagnosis. Tissue remains the gold standard for diagnosis.

For more information, contact the NGS Laboratory at ngs@ampath.co.za.