CIRCULOGENE
THERANOSTICS

PERSONALIZED GENE PROFILE

PATIENT: [redacted] GENDER: M AGE: 65 DOB: [redacted]

CLIENT NAME: [redacted] CLIENT NUMBER: 2239

PHYSICIAN: Yuhico, Luke SAMPLE ID: 21252

SAMPLE TYPE: Blood COLLECTION DATE: 04/08/20 DATE RECEIVED: 04/09/2020 REPORT DATE: 04/15/2020

INDICATION: Lung Panel

SUMMARY OF RESULTS

Gene(s) Tested:	50
Alteration(s) Detected:	2
FDA-Approved Targeted Therapies:	1
Additional Therapies:	0
Open Clinical Trials: see pg 5	57

These mutations, relevant in lung cancer, were tested and determined to be Detected/Not detected or Test Not Performed

Result	Gene	Variant	Alteration
Not detected	EGFR Sensitivity		
Not detected	EGFR Resistance		
Not detected	KRAS		
Not detected	BRAF		

Reference "Alterations Detected" section below for therapeutic and/or clinical trial significance. Reference "Immunotherapy & RNA Test Result "section for ALK, ROS, and PD-L1 results.

IMMUNOTHERAPY TEST RESULTS

		FDA GUIDANCE
PD-L1 EXPRESSION	**Positive (≥50%)**	Pembrolizumab

RNA TEST RESULTS

		FDA GUIDANCE
ALK GENE FUSION	**Not Detected**	
ROS1 GENE FUSION	**Not Detected**	

bPCR TEST RESULTS EGFR mutation: Not detected KRAS mutation: Not detected BRAF mutation: Undetermined

ALTERATIONS DETECTED

GENE	ALTERATION	MUTANT FRACTION	FDA TARGETED THERAPIES (lung cancer)	FDA TARGETED THERAPIES (for other indications)	CLINICAL TRIALS (DETAILS BELOW)
BRAF	No Reported Mutation		Dabrafenib not indicated	Melanoma (BRAF Wild Type): Nivolumab & Pembrolizumab Indicated; Dabrafenib, Trametinib, Vemurafenib & Cobimetinib NOT indicated	28
RET	p.D631G; c.1892A>G	11.5%	None		12

RET DESCRIPTION
This gene encodes a transmembrane receptor and member of the tyrosine protein kinase family of proteins. Binding of ligands such as GDNF (glial cell-line derived neurotrophic factor) and other related proteins to the encoded receptor stimulates receptor dimerization and activation of downstream signaling pathways that play a role in cell differentiation, growth, migration and survival. The encoded receptor is important in development of the nervous system, and the development of organs and tissues derived from the neural crest. This proto-oncogene can undergo oncogenic activation through both cytogenetic rearrangement and activating point mutations. Mutations in this gene are associated with Hirschsprung disease and central hypoventilation syndrome and have been identified in patients with renal agenesis. [provided by RefSeq, Sep 2017]

TP53	p.P72R; c.215C>G Exon 4	100.0%	None		6

TP53 DESCRIPTION
This gene encodes a tumor suppressor protein containing transcriptional activation, DNA binding, and oligomerization domains. The encoded protein responds to diverse cellular stresses to regulate expression of target genes, thereby inducing cell cycle arrest, apoptosis, senescence, DNA repair, or changes in metabolism. Mutations in this gene are associated with a variety of human cancers, including hereditary cancers such as Li-Fraumeni syndrome. Alternative splicing of this gene and the use of alternate promoters result in multiple transcript variants and isoforms. Additional isoforms have also been shown to result from the use of alternate translation initiation codons from identical transcript variants (PMIDs: 12032546, 20937277). [provided by RefSeq, Dec 2016]

KRAS	No Reported Mutation		None	Colon (KRAS Wild Type): Cetuximab & Panitumumab	24
NRAS	No Reported Mutation		None	Colon (NRAS Wild Type): Cetuximab & Panitumumab	6