



PATIENT INFORMATION		PHYSICIAN INFORMA	TION
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GENESTRAT® GENOMIC TEST RESULTS			
Test	Variant	Results	
EGFR Mutations	Exon 19 ΔΕ746-A750	POSITIVE	
	Exon 21 L858R	Negative	
	Exon 18 G719A, G719C, G719S Exon 20 S768I Exon 21 L861Q	Negative	
	Exon 20 T790M	Negative	
ALK Fusions	EML4	Negative	
KRAS Mutations	G12C	Negative	
	G12D	Negative	
	G12V	Negative	
BRAF Mutation	V600E	Negative	

RESULTS INTERPRETATION: EGFR** | ALK | KRAS | BRAF

Positive: Presence of 2 or more copies of the variant Negative: Presence of fewer than 2 copies of the variant

Quantity Not Sufficient (QNS): Test performed, and results not definitive — due to lack of sufficient amount of nucleic acid.

No bill will be submitted for this gene. Redraw recommended.

Test Not Performed (TNP)

Patient:	GS Accession No:	Date Performed Reported:
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Donald Joe Chaffin, M.D. CAP Accredited CLIA Laboratory Director

^{**}Exon 18 G719A, G719C, G719S | Exon 20 S768I | Exon 21 L861Q: For a Positive Result, presence of 6 or more copies of the variant. For a Negative Result, presence of fewer than 6 copies of the variant.



GENESTRAT® TREATMENT IMPLICATIONS			
Available Mutations	Treatment Implications for Early Stage NSCLC ^{1,8}	Treatment Implications for Advanced Stage NSCLC ¹⁻¹⁷	
EGFR Mutations Exon 19 ΔΕ746-A750 Exon 21 L858R	May benefit from adjuvant osimertinib	May benefit from treatment with osimertinib or erlotinib, afatinib, gefitinib, dacomitinib, erlotinib + ramucirumab, or erlotinib + bevacizumab	
Exon 18 G719A, G719C, G719S Exon 20 S768l Exon 21 L861Q	Consider clinical trial enrollment	May benefit from treatment with afatinib, osimertinib, or erlotinib, gefitinib, dacomitinib	
Exon 20 T790M	Consider clinical trial enrollment	May benefit from treatment with osimertinib if previously treated with 1st or 2nd generation EGFR-TKIs	
ALK Fusions EML4	May benefit from adjuvant alectinib	May benefit from treatment with alectinib, brigatinib, lorlatinib, or ceritinib, crizotinib	
KRAS Mutations G12D G12V	Consider clinical trial enrollment	KRAS mutations are associated with poorer prognosis	
G12C	Consider clinical trial enrollment	May benefit from treatment with sotorasib or adagrasib	
BRAF Mutation V600E	Consider clinical trial enrollment	May benefit from dabrafenib + trametinib, encorafenib + binimetinib, or vemurafenib, dabrafenib	

GENESTRAT ANALYSIS DESCRIPTION¹⁸⁻²⁴

GeneStrat genomic testing is a laboratory test service that determines the presence of somatic genetic variants in circulating nucleic acids (DNA and RNA) from the plasma of patients with lung cancer using the ddPCR™ system (Droplet Digital™ Polymerase Chain Reaction)*. In the ddPCR system process, a patient sample is dispersed in an emulsion so that individual nucleic acid molecules are isolated. After amplification, nucleic acids are quantified by counting the emulsion that contains PCR end-product, or positive reactions. The GeneStrat test is a genomic approach to detect somatic nucleotide variants, including insertions, deletions and point mutations, as well as fusion products.

The GeneStrat test solely reports the presence or absence of certain, limited genomic alterations which may be useful for physicians when considering different therapeutic options. The mutations detected using the GeneStrat test account for a large proportion of variants found in NSCLC, including EGFR (89% coverage), ALK (78%), KRAS (78%), and BRAF (54%). Accordingly, results are adjunctive to the ordering physician's workup and should be evaluated by a qualified healthcare professional in combination with the patient's clinical history, other diagnostic tests, and clinicopathological factors. For patients that test negative for all mutations, tissue biopsy can be considered. Values obtained with a different assay method or kit cannot be used interchangeably. Results cannot be interpreted as absolute evidence of the presence or absence of malignant disease.

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REFERENCES

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- 24. COSMIC, The Catalogue of Somatic Mutations in Cancer: v98, 23-MAY-23. cancer.sanger.ac.uk/

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	Exon 20 T790M	Negative	
ALK Fusions	EML4	Negative	
KRAS Mutations	G12C	Negative	
	G12D	Negative	
	G12V	Negative	
BRAF Mutation	V600E	Negative	
ROS1 Fusions	CD74 SDC4 SLC34A2 EZR TPM3	Negative	
RET Fusions	KIF5B CCDC6 TRIM33	Negative	

RESULTS INTERPRETATION: EGFR** | ALK | KRAS | BRAF | ROS1* | RET*

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GENESTRAT® TREATMENT IMPLICATIONS			
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ROS1 Fusions CD74 SDC4 SLC34A2 EZR TPM3	Consider clinical trial enrollment	May benefit from treatment with crizotinib, ceritinib, entrectinib, or lorlatinib	
RET Fusions KIF5B CCDC6 TRIM33	Consider clinical trial enrollment	May benefit from treatment with selpercatinib, pralsetinib, or cabozantinib	

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 18. ROZLYTREK® (entrectinib), Genentech, Inc., South San Francisco, CA, USA.

 19. RETEVMO® (selpercatinib), Eli Lilly and Company, Indianapolis, IN, USA.

 20. GAVRETO® (pralsetinib), Blueprint Medicines Corporation, Cambridge, MA, USA.

 21. CABOMETYX® (cabozantinib), Exelixis, Inc., Alameda, CA, USA.

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Gary Pestano, Ph.D., New York Laboratory Director

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By accepting receipt of the GeneStrat Test Result Report or any content derived from it ("GS TRR"), the ordering physician, institution of ordering physician, or any third parties to whom the GS TRR is transferred, agree the GS TRR may only be used for the clinical management of the patient identified in the GS TRR by the ordering physician. Any other use of the GS TRR including, without limitation, correlative studies, diagnostic development, derivative works or other analyses, is expressly prohibited. The results of any unauthorized use of the GS TRR shall belong solely and exclusively to Biodesix, Inc. Additional terms and conditions related to this GS TRR can be found at www.biodesix.com.

Patient: <First and LastName> **GS** Accession No: BDXAYYMMDD#### Date Performed | Reported: <Mon DD, YYYY>





PATIENT INFORMATION		PHYSICIAN INFORMATION		
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GENESTRAT® GENOMIC TEST RESULTS				
Test	Variant	Results		
EGFR Mutations	Exon 19 ΔΕ746-A750	POSITIVE		
	Exon 21 L858R	Negative		
	Exon 18 G719A, G719C, G719S Exon 20 S768I Exon 21 L861Q	Negative		
	Exon 20 T790M	Negative		
ALK Fusions	EML4	Negative		
KRAS Mutations	G12C	Negative		
	G12D	Negative		
	G12V	Negative		
BRAF Mutation	V600E	Negative		
ROS1 Fusions	CD74 SDC4 SLC34A2 EZR TPM3	Negative		
RET Fusions	KIF5B CCDC6 TRIM33	Negative		

RESULTS INTERPRETATION: EGFR** | ALK | KRAS | BRAF | ROS1* | RET*

Positive: Presence of 2 or more copies of the variant Negative: Presence of fewer than 2 copies of the variant

Quantity Not Sufficient (QNS): Test performed, and results not definitive — due to lack of sufficient amount of nucleic acid.

No bill will be submitted for this gene. Redraw recommended.

Test Not Performed (TNP)

*For a Positive Result, presence of 10 or more copies of the variant. For a Negative Result, presence of fewer than 10 copies of the variant.

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Gary Pestano, Ph.D., New York Laboratory Director

^{**}Exon 18 G719A, G719C, G719S | Exon 20 S768I | Exon 21 L861Q: For a Positive Result, presence of 6 or more copies of the variant. For a Negative Result, presence of fewer than 6 copies of the variant.



GENESTRAT® TREATMENT IMPLICATIONS				
Available Mutations	Treatment Implications for Early Stage NSCLC ^{1,8}	Treatment Implications for Advanced Stage NSCLC ¹⁻²¹		
EGFR Mutations Exon 19 ΔΕ746-Α750 Exon 21 L858R	May benefit from adjuvant osimertinib	May benefit from treatment with osimertinib or erlotinib, afatinib, gefitinib, dacomitinib, erlotinib + ramucirumab, or erlotinib + bevacizumab		
Exon 18 G719A, G719C, G719S Exon 20 S768I Exon 21 L861Q	Consider clinical trial enrollment	May benefit from treatment with afatinib, osimertinib, or erlotinib, gefitinib, dacomitinib		
Exon 20 T790M	Consider clinical trial enrollment	May benefit from treatment with osimertinib if previously treated with $1^{\rm st}$ or $2^{\rm nd}$ generation EGFR-TKIs		
ALK Fusions EML4	May benefit from adjuvant alectinib	May benefit from treatment with alectinib, brigatinib, lorlatinib, or ceritinib, crizotinib		
KRAS Mutations G12D G12V	Consider clinical trial enrollment	KRAS mutations are associated with poorer prognosis		
G12C	Consider clinical trial enrollment	May benefit from treatment with sotorasib or adagrasib		
BRAF Mutation V600E	Consider clinical trial enrollment	May benefit from dabrafenib + trametinib, encorafenib + binimetinib, or vemurafenib, dabrafenib		
ROS1 Fusions CD74 SDC4 SLC34A2 EZR TPM3	Consider clinical trial enrollment	May benefit from treatment with crizotinib, ceritinib, entrectinib, or lorlatinib		
RET Fusions KIF5B CCDC6 TRIM33	Consider clinical trial enrollment	May benefit from treatment with selpercatinib, pralsetinib, or cabozantinib		

GENESTRAT ANALYSIS DESCRIPTION²²⁻²⁹

GeneStrat genomic testing is a laboratory test service that determines the presence of somatic genetic variants in circulating nucleic acids (DNA and RNA) from the plasma of patients with lung cancer using the ddPCR™ system (Droplet Digital™ Polymerase Chain Reaction)*. In the ddPCR system process, a patient sample is dispersed in an emulsion so that individual nucleic acid molecules are isolated. After amplification, nucleic acids are quantified by counting the emulsion that contains PCR end-product, or positive reactions. The GeneStrat test is a genomic approach to detect somatic nucleotide variants, including insertions, deletions and point mutations, as well as fusion products.

The GeneStrat test solely reports the presence or absence of certain, limited genomic alterations which may be useful for physicians when considering different therapeutic options. The mutations detected using the GeneStrat test account for a large proportion of variants found in NSCLC, including EGFR (89% coverage), ALK (78%), KRAS (78%), and BRAF (54%). Accordingly, results are adjunctive to the ordering physician's workup and should be evaluated by a qualified healthcare professional in combination with the patient's clinical history, other diagnostic tests, and clinicopathological factors. For patients that test negative for all mutations, tissue biopsy can be considered. Values obtained with a different assay method or kit cannot be used interchangeably. Results cannot be interpreted as absolute evidence of the presence or absence of malignant disease.

*ddPCR and Droplet Digital are trademarks of Bio-Rad Laboratories, Inc.

REFERENCES

- TAGRISSO® (osimertinib), AstraZeneca Pharmaceuticals LP, Wilmington, DE, USA.
- TARCEVA® (erlotinib), Genentech, Inc., South San Francisco, CA, USA. GILOTRIF® (afatinib), Boehringer Ingelheim Pharmaceuticals, Inc., Ridgefiel IRESSA® (gefitinib), AstraZeneca Pharmaceuticals LP, Wilmington, DE, USA.

- IRESSA® (geftinib), ÄstraZenēca Phārmaceuticals LP, Wilmington, DE, USA.
 VIZIMPRO® (dacomitinib), Pfizer Inc., New York, NY, USA.
 CYRAMZA® (ramucirumab), Eli Lilly and Company, Indianapolis, IN, USA.
 AVASTIN® (bevacizumab), Genentech, Inc., South San Francisco, CA, USA.
 ALECENSA® (alectinib), Genentech, Inc., South San Francisco, CA, USA.
 ALUNBRIG® (brigatinib), Takeda Oncology, Cambridge, MA, USA.
 LORBRENA® (loriatinib), Pfizer Inc., New York, NY, USA.
 ZYKADIA® (certinib), Novartis Pharmaceuticals Corporation, East Hanover, NJ, USA.
 XALKORI® (crizotinib), Pfizer Inc., New York, NY, USA.
 LUMAKRAS® (sotorasib), Amgen Inc., Thousand Oaks, CA, USA.
 KRAZATI® (adagrasib), Mirati Therapeutics, Inc., San Diego, CA, USA.
 TAFINLAR® (dabrafenib) + MEKINIST® (trametinib), Novartis Pharmaceuticals Corporation, East Hanover, NI. USA

- TAFINLAR® (dabratenib) + MEKINIST® (trametinib), Novartis Pharmaceuticals Corporation, Eas Hanover, NJ, USA.
 BRAFTOVI® (encorafenib) + MEKTOVI® (binimetinib), Pfizer Inc., New York, NY, USA.
 ZELBORAF® (vemurafenib), Genentech, Inc., South San Francisco, CA, USA.
 ROZLYTRER® (entrectinib), Genentech, Inc., South San Francisco, CA, USA.
 RETEVMO® (selpercatinib), Eli Lilly and Company, Indianapolis, IN, USA.
 GAVRETO® (pralsetinib), Blueprint Medicines Corporation, Cambridge, MA, USA.
 CABOMETYX® (cabozantinib), Eselixis, Inc., Alameda, CA, USA.
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