



Genekor

Committed to Biotechnological Innovation



Clinical Testing
Cert. No. 822

Genekor Medical S.A. | 52, Spaton Ave., 15344, Gerakas, Athens, Greece, G.E.MI. nr: 0007856001000
email: info@genekor.com, www.genekor.com | Tel. (+30) 210 6032138 Fax. (+30) 210 6032148

REPORT

Scientific Director: George Nasioulas PhD

Sample Information

Name:	.....	Req. Physician:	.....
ID/Medical ID:	.....	Barcode:	.....
Date of Birth:	.....	Date Received:	.....
Histology From:	.....	Date of Report:	.....
Histology No:	.....		
Location:	.....		

Sample Details:

Type of sample #1:	PARAFFIN EMBEDDED TISSUE	Code of sample #1:	.....
Barcode of sample #1:	.....		

* The sample was sent to Medical S.A. by an external collaborating center. Sample analysis took place at Medical S.A.

PD-L1 SP263 Immunohistochemistry by VENTANA in NSCLC

PD-L1 protein expression is determined by using Tumor Proportion Score (TPS), which is the percentage of viable tumor cells showing partial or complete membrane staining at any intensity. This assay is indicated as an aid in identifying NSCLC patients for treatment with immunotherapeutic agents.

VENTANA SP263 by IHC (CE IVD) is a qualitative immunohistochemical assay using Monoclonal Mouse Anti-PD-L1, Clone SP263, intended for use in the detection of PD-L1 protein in formalin-fixed, paraffin-embedded (FFPE) non-small cell lung cancer (NSCLC) tissue, using VENTANA BenchMark Series automated staining instrument. The specimen submitted for testing should contain at least 100 viable tumor cells to be considered adequate for evaluation. Normal tonsil tissue was used as positive control. The test is used to predict immunotherapy response in patients with locally advanced or metastatic cancer.

Results

Material Suitable for Analysis

PD-L1 Positive: TPS≥50%

Electronically Signed by - Eleni Patsea, MD Pathologist, AMKA:311261100788

- George Nasioulas, PhD Molecular Biologist, Scientific Director, AMKA:26025301255

Genekor a company certified with ELOT EN ISO 9001:2015 (Cert. No 041150049) and accredited under the terms of ELOT EN ISO 15189:2012 (Cert. No. 822)

Document Code: Δ21_EN10.1





Genekor

Committed to Biotechnological Innovation

Genekor Medical S.A. | 52, Spaton Ave., 15344, Gerakas, Athens, Greece, G.E.MI. nr: 0007856001000

email: info@genekor.com, www.genekor.com | Tel. (+30) 210 6032138 Fax. (+30) 210 6032148

REPORT

Scientific Director: George Nasioulas PhD

Name: Barcode: Location: -

PD-L1 interpretation and cut-offs

Cancer type	Therapy	PD-L1	Cut-off	We report
Non-Small Cell Lung Cancer (NSCLC)	Anti-PD-1 ^[1-4]	VENTANA (SP263)	1L TPS ≥ 50% 2L TPS ≥ 1%	%TPS
	Anti-PD-L1 ^[5-7]	VENTANA (SP263)	2L TPS ≥ 1%	%TPS
		VENTANA (SP263)	1L TPS ≥ 50%	%TPS
		VENTANA (SP142)	1L TC ≥ 50% or IC ≥ 10%	%TC/IC
Urothelial Cancer (UC)	Anti-PD-1 + Anti-CTLA-4 ^[8]	VENTANA (SP263)	1L TPS ≥ 1%	%TPS
	Anti-PD-1 ^[9]	Dako 22C3	1L CPS ≥ 10	CPS
	Anti-PD-1 ^[19]	VENTANA (SP263)	1L TC ≥ 1%	TC
	Anti-PD-L1 ^[10]	VENTANA (SP142)	2L IC ≥ 5%	%IC
Triple Negative Breast Cancer (TNBC)	Anti-PD-L1 ^[11]	VENTANA (SP142)	1L IC ≥ 1%	%IC
Cervical cancer	Anti-PD-1 ^[12] + chemotherapy	Dako 22C3	1L CPS ≥ 10	CPS
	Anti-PD-1 ^[16]	Dako 22C3	2L CPS ≥ 1	CPS
Head and Neck Squamous Cell Carcinoma (HNSCC)	Anti-PD-1 ^[14,15]	Dako 22C3	1L CPS ≥ 1 2L TPS ≥ 50%	CPS and %TPS
Gastric cancer (adenocarcinoma) (HER-2 Positive)	Anti-PD-1 ^[13,20]	Dako 22C3	1L CPS ≥ 1	CPS
Gastric cancer (adenocarcinoma) (HER-2 Negative)	Anti-PD-1 ^[18, 20]	Dako 22C3	1L CPS ≥ 5	CPS
Oesophageal (Adenocarcinoma and squamous carcinoma)	Anti-PD-1 ^[17]	Dako 22C3	1L CPS ≥ 10	CPS
Oesophageal (squamous carcinoma)	Anti-PD-1 ^[17]	Dako 22C3	1L TC ≥ 1	TC
Oesophageal (Adenocarcinoma) (HER-2 Negative)	Anti-PD-1 ^[17]	Dako 22C3	1L CPS ≥ 5	CPS
Gastro-oesophageal junction Adenocarcinoma (HER-2 Negative)	Anti-PD-1 ^[17,20] *Depending on PD-L1 inhibitor	Dako 22C3	1L CPS ≥ 5 or* 1L CPS ≥ 10	CPS
Gastro-oesophageal junction Adenocarcinoma (HER-2 Positive)		Dako 22C3	1L CPS ≥ 1	

1. Reck M, et al N Engl J Med. 2016 Nov 10;375(19):1823-1833 | 2. Herbst RS, et al Lancet. 2016 Apr 9;387(10027):1540-50. | 3. Brahmer J, et al N Engl J Med. 2015 Jul 9;373(2):123-35. | 4. Borghaei H, et al N Engl J Med. 2015 Oct 22;373(17):1627-39. | 5. Antonia SJ, et al N Engl J Med. 2018 Dec 13;379(24):2342-2350. | 6. Sezer A, et al Lancet. 2021 Feb 13;397(10274):592-604. | 7. Herbst RS, et al N Engl J Med. 2020;383(14):1328-1339. | 8. Hellmann MD, et al 2019 N Engl J Med. 2019 Nov 21;381(21):2020-2031. | 9. Balar AV, et al Lancet Oncol. 2017 Nov;18(11):1483-1492. | 10. Balar AV, et al Lancet. 2017 Jan 7;389(10064):67-76. | 11. Schmid P, et al N Engl J Med. 2018 Nov 29;379(22):2108-2121. | 12. Cortes J, et al 2020 J Clin Oncol. 2020;38(suppl 15):1000. | 13. Bang YJ, et al 2019 Mar 25. doi: 10.1007/s10120-018-00909-5. | 14. Cohen EEW, et al Lancet Oncol. 2019 Jan 12;393(10167):156-167. | 15. Rischin D, et al 2019 J Clin Oncol 37, (suppl; abstr 6000) | 16. Chung HC, et al 2018 J Clin Oncol 36:15_suppl, 5522-5522 | 17. Kojima T, et al J Clin Oncol. 2020;38(35):4138-4148. | 18. Yelena Y Janjigian et al. , 2021. 10.1016/ S0140-6736(21)00797-2 | 19. 2021 Jun 3;384(22):2102-2114. doi: 10.1056/NEJMoa2034442.20. Yelena Y. Janjigian, et al Nature. 2021 December ; 600(7890): 727–730. doi:10.1038/s41586-021-04161-3. | 20. Yelena Y. Janjigian, et al Nature. 2021 December ; 600(7890): 727–730. doi:10.1038/s41586-021-04161-3

TPS: Tumor Proportion Score = $\frac{\text{\#PD-L1 positive tumor cells}}{\text{Total \#PD-L1 positive+PD-L1 negative tumor cells}}$

TC: tumor cell

CPS: Combined Positive Score = $\frac{\text{\#PD-L1 staining cells (tumor cells, lymphocytes, macrophages)}}{\text{Total \# of viable tumor cells}}$

IC: immune cell

*****Note** : Each analysis has an internal error probability of 0,5-1%. This is due to rare events and factors involved in the production and analysis of specimens.

Electronically Signed by - Eleni Patsea, MD Pathologist, AMKA:311261100788

- George Nasioulas, PhD Molecular Biologist, Scientific Director, AMKA:26025301255



Genekor a company certified with ELOT EN ISO 9001:2015 (Cert. No 041150049) and accredited under the terms of ELOT EN ISO 15189:2012 (Cert. No. 822)

Document Code: Δ21_EN10.1



Genekor

Committed to Biotechnological Innovation

Genekor Medical S.A. | 52, Spaton Ave., 15344, Gerakas, Athens, Greece, G.E.MI. nr: 0007856001000
email: info@genekor.com, www.genekor.com | Tel. (+30) 210 6032138 Fax. (+30) 210 6032148

REPORT

Scientific Director: George Nasioulas PhD

Name:	Barcode:	Location:	-
-------	----------	-----------	---

References

1. Paulsen EE, Kilvaer TK, Khanekkenari MR, Al-Saad S, Hald SM, Andersen S, Richardsen E, Ness N, Busund LT, Bremnes RM, Donnem T. Assessing PDL-1 and PD-1 in Non-Small Cell Lung Cancer: A Novel Immunoscore Approach. Clin Lung Cancer. 2017 Mar;18(2):220-233.e8. doi: 10.1016/j.clcc.2016.09.009. Epub 2016 Oct 5. (PMID: 27816392)
2. Phillips T, Simmons P, Inzunza HD, Cogswell J, Novotny J Jr, Taylor C, Zhang X. Development of an automated PD-L1 immunohistochemistry (IHC) assay for non-small cell lung cancer. Appl Immunohistochem Mol Morphol. 2015 Sep;23(8):541-9. doi: 10.1097/PAI.0000000000000256. ((PMID: 26317305) PMID: PMC4561627)
3. Herbst RS, Baas P, Kim DW, Felip E, Pérez-Gracia JL, Han JY, Molina J, Kim JH, Arvis CD, Ahn MJ, Majem M, Fidler MJ, de Castro G Jr, Garrido M, Lubiniecki GM, Shentu Y, Im E, Dolled-Filhart M, Garon EB. Pembrolizumab versus docetaxel for previously treated, PD-L1-positive, advanced non-small-cell lung cancer (KEYNOTE-010): a randomised controlled trial. Lancet. 2016 Apr 9;387(10027):1540-1550. doi: 10.1016/S0140-6736(15)01281-7. Epub 2015 Dec 19. (PMID: 26712084)
4. Herbst RS, Soria JC, Kowanetz M, Fine GD, Hamid O, Gordon MS, Sosman JA, McDermott DF, Powderly JD, Gettinger SN, Kohrt HE, Horn L, Lawrence DP, Rost S, Leabman M, Xiao Y, Mokatrin A, Koeppen H, Hegde PS, Mellman I, Chen DS, Hodi FS. Predictive correlates of response to the anti-PD-L1 antibody MPDL3280A in cancer patients. Nature. 2014 Nov 27;515(7528):563-7. doi: 10.1038/nature14011. ((PMID: 25428504) PMID: PMC4836193)
5. Topalian SL, Hodi FS, Brahmer JR, Gettinger SN, Smith DC, McDermott DF, Powderly JD, Carvajal RD, Sosman JA, Atkins MB, Leming PD, Spigel DR, Antonia SJ, Horn L, Drake CG, Pardoll DM, Chen L, Sharfman WH, Anders RA, Taube JM, McMiller TL, Xu H, Korman AJ, Jure-Kunkel M, Agrawal S, McDonald D, Kollia GD, Gupta A, Wigginton JM, Sznol M. Safety, activity, and immune correlates of anti-PD-1 antibody in cancer. N Engl J Med. 2012 Jun 28;366(26):2443-54. doi: 10.1056/NEJMoa1200690. Epub 2012 Jun 2. ((PMID: 22658127) PMID: PMC3544539)
6. Sung H, Ferlay J, Siegel RL, Laversanne M, Soerjomataram I, Jemal A, Bray F. Global Cancer Statistics 2020: GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries. CA Cancer J Clin. 2021 May;71(3):209-249. doi: 10.3322/caac.21660. Epub 2021 Feb 4. (PMID: 33538338)

Electronically Signed by - Eleni Patsea, MD Pathologist, AMKA:311261100788

- George Nasioulas, PhD Molecular Biologist, Scientific Director, AMKA:26025301255

Genekor a company certified with ELOT EN ISO 9001:2015 (Cert. No 041150049) and accredited under the terms of ELOT EN ISO 15189:2012 (Cert. No. 822)



Document Code: Δ21_EN10.1