



PINPOINT PD-L1 TESTING IN HNSCC



OVERVIEW OF PD-L1 TESTING¹

| Antibody | 28-8 | 22C3 | SP263* | SP142* |
|-------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|--------------------------------------------------------|---------------------------------------------------------------------------------------|
| Instrument and detection systems required | Dako Autostainer Link 48 EnVision FLEX visualization system | Dako Autostainer Link 48 EnVision FLEX visualization system | Ventana BenchMark Ultra OptiView DAB IHC Detection Kit | Ventana BenchMark Ultra OptiView DAB IHC Detection Kit and OptiView Amplification Kit |
| Product for which assay was validated | nivolumab | pembrolizumab | durvalumab▼ | atezolizumab▼ |

* The SP263 and SP142 Ventana Assays have not been commercially validated by the manufacturer for this tissue/tumour (HNSCC) and the associated products are also not indicated for the treatment of HNSCC.

CONCORDANCE BETWEEN ASSAYS BY SCORING ALGORITHM AND CUTOFFS

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SCOTT *ET AL.* 2018

- ▶ All four assays (28-8, 22C3, SP142, SP263) were tested²
- ▶ SP263, 22C3 and 28-8 assays showed good analytical correlation for TC staining (Spearman’s rank correlation coefficient 0.75–0.83)²
- ▶ Correlation was lower for IC staining (Spearman’s rank correlation coefficient 0.66–0.77)²

Assay agreement with VENTANA SP263 at CPS ≥12

| Cut-off (%) | PD-L1 IHC pharmDx 22C3 | | | PD-L1 IHC pharmDx 28-8 | | | VENTANA PD-L1 SP142 | | |
|-------------|------------------------|-----|-----|------------------------|-----|-----|---------------------|-----|-----|
| | OPA | NPA | PPA | OPA | NPA | PPA | OPA | NPA | PPA |
| CPS ≥1 | 75 | 93 | 68 | 83 | 96 | 78 | 69 | 99 | 57 |

Adapted from Scott *et al.* 2018.²



CONCORDANCE BETWEEN ASSAYS BY SCORING ALGORITHM AND CUTOFFS (continued)

2 CALDERON ET AL. 2019

Two assays were tested, SP263 and 22C3³
PD-L1 positivity for two assays using CPS ≥1 in different tissues³

| | Ventana SP263 | Dako 22C3 |
|------------------------|---------------|-----------|
| Score | n (%) | n (%) |
| Overall (n=38) | 36 (94.7) | 32 (84.2) |
| Oral cavity* (n=20) | 19 (95) | 18 (90) |
| Oropharynx HPV+ (n=13) | 12 (92.3) | 10 (76.9) |
| Oropharynx HPV- (n=1) | 1 (100) | 1 (100) |
| Larynx (n=4) | 4 (100) | 3 (75) |

Adapted from Calderon *et al.* 2019.³
* One case was positive with Ventana SP263 antibody and completely negative with Dako 22C3 antibody.

3 DE RUITER ET AL. 2019

Two assays were tested: SP263 on the Ventana Benchmark Ultra, 22C3 on the Dako Link 48 and 22C3 as an LDT on the Ventana Benchmark Ultra⁴
PD-L1 positivity in a cohort of 147 HNSCC patients using TPS and CPS⁴

| TPS (%) | SP263 | 22C3-Dako | 22C3-LDT |
|---------|-------------|------------|------------|
| ≥50% | 7 (4.8%) | 1 (0.7%) | 5 (3.4%) |
| CPS (%) | SP263 | 22C3-Dako | 22C3-LDT |
| ≥1–20% | 110 (74.8%) | 66 (44.9%) | 87 (59.2%) |
| >20% | 18 (12.2%) | 1 (0.7%) | 7 (4.8%) |

Adapted from de Ruiter *et al.* 2019.⁴
> PD-L1 positivity in the HNSCC patient cohort was low when using a TPS cut-off of ≥50%⁴
> Overall, concordance between the different staining assays was moderate for TPS (ICC=0.70) as well as for CPS (ICC=0.53)⁴

SUMMARY
There is a poorer agreement of PD-L1 assays in HNSCC than for other indications²

FURTHER INFORMATION
One laboratory-developed test (LDT) was tested, showing moderate concordance with the other tests⁴

Adverse events should be reported.
Reporting forms and information can be found at
<https://yellowcard.mhra.gov.uk/> or search for MHRA Yellow Card in the Google Play or Apple App Store.
Adverse events should also be reported to MSD (Tel: 0208 154 8000)

REFERENCES

1. Ionescu DN *et al.* *Curr Oncol.* 2018; 25(3): e209–e216.
2. Scott M *et al.* Presented at ESMO 2018, Abstract P1051PD.
3. Calderon MR *et al.* Presented at ECP 2019, PS-03-019.
4. de Ruiter EJ *et al.* Presented at ECP 2019, PS-03-006.

ABBREVIATIONS

CPS, combined positive score
IC, immune cells
HNSCC, Head and neck squamous cell carcinoma
HPV, Human papillomavirus
LDT, laboratory- developed test
NPA, negative percent agreement
OPA, overall percent agreement
PD-L1, programmed death ligand-1
PPA, positive percent agreement
TC, tumour cells
TPS, tumour proportion score