



PD-L1 TESTING IN UC

OVERVIEW OF PD-L1 TESTING^{1,2}

Antibody	28-8	22C3	SP142	SP263
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 and OptiView Amplification Kit	Ventana BenchMark Ultra OptiView DAB IHC Detection Kit
Product for which assay was validated	nivolumab*	pembrolizumab	atezolizumab▼	durvalumab▼†
Associated scoring algorithm	TPS	CPS	IC	TC, IC

* PD-L1 testing is not required.
† Durvalumab is not currently licensed for UC in the UK.

CONCORDANCE BETWEEN ASSAYS BY SCORING ALGORITHM AND CUTOFFS

1

HODGSON *ET AL.* 2018

- Assays tested/compared: Ventana SP263, Ventana SP142, Dako 22C3²
- Fleiss' kappa ICC analysis showed excellent reliability between SP263 and 22C3 (ICC=0.929) in TC staining²
 - SP142 TC staining was lower with moderate correlation (ICC 0.525–0.619)²
- The reliability of IC staining was lower compared to TC staining (ICC 0.519–0.866)²



2

TRETIAKOVA *ET AL.* 2018

- ▶ Assays tested/compared: 22C3, 28-8, SP142³
- ▶ Pairwise concordance correlation coefficients between the three antibodies ranged from 0.76 to 0.88 for tumour cells and from 0.35 to 0.85 for immune cells³
 - ▶ In tumour cells, the highest agreement was reached between 22C3/28-8 (concordance correlation coefficient 0.88 (0.86–0.90), whereas the lowest agreement was seen between 22C3/SP142 0.76 (0.73–0.79), with the comparison of 28-8/SP142, 0.85 (0.83–0.87), falling between the two³
 - ▶ In immune cells, the highest agreement was reached between 22C3/28-8 (concordance correlation coefficient 0.85 (0.83–0.97), whereas the lowest agreement was seen between 22C3/SP142 0.35 (0.29–0.40), with the comparison of 28-8/SP142, 0.38 (0.32–0.43), also showing a low level of agreement³

3

SCHWAMBORN *ET AL.* 2017

- ▶ Assays tested/compared: Ventana SP142, Ventana SP263, Dako 22C3, Dako 28-8⁴
- ▶ Retrospective allocation to binary cut-offs (1%, 5% and 10%) for IC and TC showed substantial or high Kappa agreement scores (0.6–0.8) for IC and TC between assays for each reader⁴
- ▶ High concordance rates across all assays were achieved between trained readers for scoring PD-L1 on IC and TC⁴

SUMMARY

Overall, the results found that all the assays showed reasonable concordance^{2–4}

FURTHER INFORMATION

The platform independent test E1L3N (Cell Signalling Technologies) and the RNAscope assay were also tested, showing good concordance with other assays^{2,3}

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. Hodgson A *et al.* *Am J Surg Pathol.* 2018; 42(8): 1059–1066.
3. Tretiakova M *et al.* *Mod Pathol.* 2018; 31(4): 623–632.
4. Schwamborn K *et al.* Presented at EMSO 2017. Abstract 1175P.

ABBREVIATIONS

CPS, combined positive score
IC, immune cells
ICC, intraclass correlation coefficient
PD-L1, programmed death ligand-1
TC, tumour cells
TPS, tumour proportion score