

## Biomarker Testing for Checkpoint Inhibitors

<b>KEYTRUDA®</b> (pembrolizumab) anti-PD-1	<b>OPDIVO®</b> (nivolumab) anti-PD-1	<b>TECENTRIQ®</b> (atezolizumab) anti-PD-L1	<b>BAVENCIO®</b> (avelumab) anti-PD-L1	<b>IMFINZI™</b> (durvalumab) anti-PD-L1
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Colorectal Carcinoma	dMMR or MSI-H	dMMR or MSI-H			
Gastric Carcinoma	FDA approved with PD-L1 <b>22C3<sup>Δ</sup></b> ≥1 CPS				
Head & Neck Squamous Cell CA	FDA approved; no testing required	FDA approved with PD-L1 <b>28-8<sup>†</sup></b> ≥1% TPS			
Hepatocellular Carcinoma		FDA approved; no testing required			
Hodgkin Lymphoma	FDA approved; no testing required	FDA approved; no testing required			
Melanoma	FDA approved; no testing required	FDA approved with PD-L1 <b>28-8<sup>†</sup></b> ≥1% TPS			
Merkel Cell Carcinoma				FDA approved; no testing required	
NSCLC 1st Line	FDA approved with PD-L1 <b>22C3<sup>Δ</sup></b> ≥50% TPS				
NSCLC 1st Line Combo Treatment with Chemotherapy	FDA approved; no testing required				
NSCLC 2nd Line	FDA approved with PD-L1 <b>22C3<sup>Δ</sup></b> ≥1% TPS	FDA approved with PD-L1 <b>28-8<sup>†</sup></b> ≥1%, ≥5%, ≥10% TPS	FDA approved with PD-L1 <b>SP142<sup>†</sup></b> ≥50% TC / ≥10% IC		
Renal Cell CA		FDA approved; no testing required			
Urothelial CA (Bladder)	FDA approved; no testing required	FDA approved with PD-L1 <b>28-8<sup>†</sup></b> ≥1% TPS	FDA approved with PD-L1 <b>SP142<sup>†</sup></b> ≥5% IC	FDA approved; no testing required	FDA approved with PD-L1 <b>SP263<sup>†</sup></b> ≥ 25% of TC exhibit membrane staining; or, ICP > 1% & IC+ ≥ 25%; or, ICP = 1% & IC+ = 100%
"Pan Tumor" Tumor Agnostic	dMMR or MSI-H				

Δ = FDA approved companion diagnostic (required); † = FDA approved complementary diagnostic (optional)  
 TPS = Tumor proportion score; CPS = Combined positive score; TC = Tumor cells; IC = Immune cells;  
 ICP = Immune cells present; MSI-H = Microsatellite instability (high); dMMR = Mismatch repair (deficient)

Testing available NOW at PhenoPath	<b>22C3</b> Dako Link 48	<b>28-8</b> Dako Link 48	<b>SP142</b> Ventana Ultra	<b>E1L3N</b> Generic	<b>MMR IHC or MSI PCR</b> Generic
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**Specimen requirements:** FFPE block or 4 to 5 unstained slides cut at 4µm

**To submit a specimen:** Request supplies or use any requisition form at [www.phenopath.com](http://www.phenopath.com); indicate PD-L1 clone desired; ship FedEx standard overnight in secure shipping container (provided by PhenoPath upon request)

**Turnaround time:** 24-48 hours from receipt of specimen (PD-L1 and MMR IHC); 5-8 days from receipt of specimen (MSI PCR)

**References:** [keytruda.com](http://keytruda.com), [opdivo.com](http://opdivo.com), [tecentriq.com](http://tecentriq.com), [bavencio.com](http://bavencio.com), [imfinzi.com](http://imfinzi.com), [dako.com](http://dako.com), [ventana.com](http://ventana.com), [fda.gov](http://fda.gov), [drugs.com](http://drugs.com)

**Disclaimer:** The content of this poster should not be relied upon as the sole source of information to guide specimen testing or patient treatment.