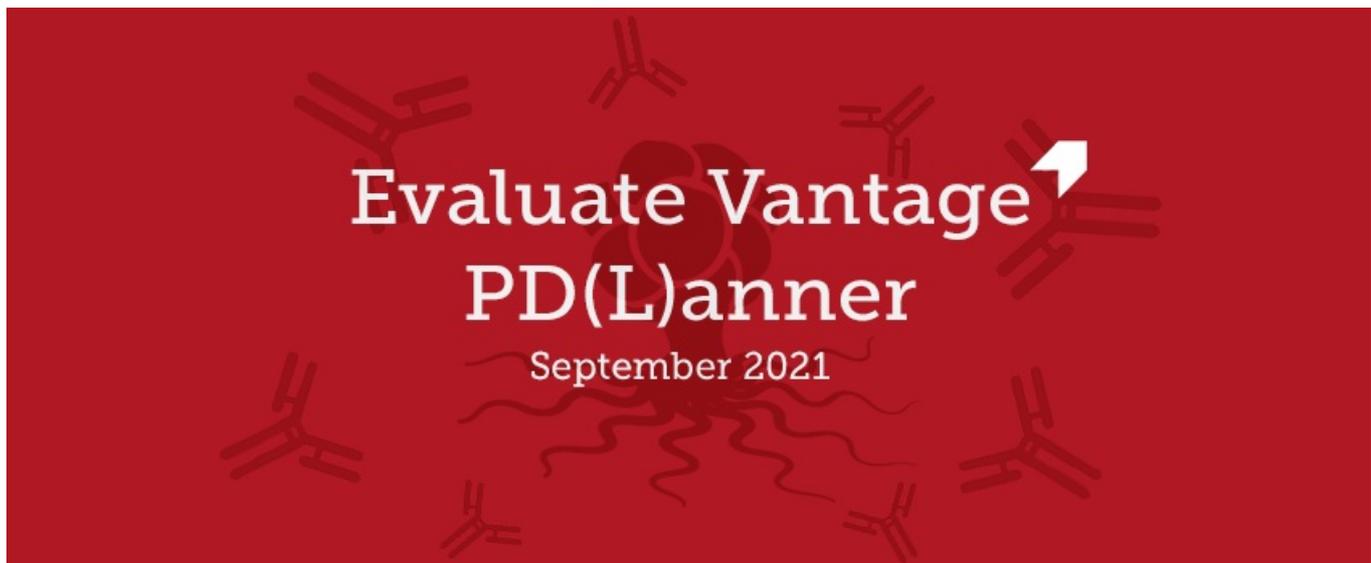


Tecentriq pullout dominates the latest PD-(L)1 moves



Jacob Plieth



July and August saw key regulatory and clinical developments for several anti-PD-(L)1 MAb, with plenty more in store for oncology watchers.

Welcome to the first in a series of periodic *Evaluate Vantage* updates on developments in the PD-(L)1 inhibitor space.

Perhaps the most significant move in July and August was last week's withdrawal by Roche of Tecentriq's first-line triple-negative breast cancer indication, a use backed by the Impassion-131 trial, but whose accelerated approval failed to be backed by Impassion-130.

The move means that four of six accelerated approvals of anti-PD-(L)1 drugs with failed confirmatory trials scrutinised at an April 27-29 US advisory panel meeting have now been pulled. The remaining two are Merck & Co's Keytruda in second-line liver cancer and in urothelial bladder cancer, an indication that had already been narrowed by the FDA.

The Roche development was surprising because the adcom appeared to have given Tecentriq a relatively strong endorsement, with panellists voting seven to two in favour of retaining the TNBC indication. Moreover, the failed Impassion-130 trial did not demonstrate an overall survival benefit largely owing to a statistical quirk.

Either way, an adcom seen at the time as [endorsing most so-called "dangling" PD-\(L\)1 approvals](#) - those with failed confirmatory studies - has actually resulted in numerous market withdrawals. Perhaps that had always been part of the FDA's thinking when the panel was convened.

Just four days later Keytruda had its front-line urothelial carcinoma label restricted further, specifying that it can only be used in this setting in patients ineligible for platinum chemo; previously it could have been used in those eligible for non-cisplatin chemo if their tumours expressed PD-L1 at $\geq 10\%$. On the plus side, this newly restricted use was granted full approval.

Anti-PD-(L)1 drugs with accelerated US approvals and failed confirmatory trials

Drug (company)	Indication	Failed potentially confirmatory trial(s)	27-29 Apr 2021 adcom vote	Regulatory outcome	Advanced potentially confirmatory trials remaining?
Keytruda (Merck & Co)	Urothelial bladder cancer (2L/1L)	Keynote-361 (1L)	Keep indication (5-3)	US label narrowed 3 Jul 2018 & 31 Aug 2021	Keynote-676 (BCG combo in non-muscle invasive bladder cancer)
	Liver cancer (2L)	Keynote-240 (2L)	Keep indication (8-0)	None	Keynote-394 (2nd-line Asian patients)
	Gastric/GEJ adenocarcinoma (3L)	Keynote-061 (2L) & 062 (1L, inconclusive)	Withdraw (6-2)	Withdrawn 1 Jul 2021	Keynote-585 (neoadjuvant/ adjuvant chemo combo)
	SCLC (3L)	Keynote-604 (1L)	(NA - already withdrawn)	Withdrawn 1 Mar 2021	No
Tecentriq (Roche)	Urothelial bladder cancer (1L)	Imvigor-211 (2L)	Keep indication (10-1)	US label narrowed 3 Jul 2018; 2L use withdrawn 8 Mar 2021	Imvigor-130 final readout
	TNBC (1L)	Impassion-131 (1L)	Keep indication (7-2)	Withdrawn 27 Aug 2021	Impassion-132 (note OS benefit in Ipassion-130 not statistically tested)
Opdivo (BMS)	Liver cancer (2L)	Checkmate-459 (1L)	Withdraw (5-4)	Withdrawn 23 Jul 2021	Checkmate-9DX (adjuvant)
	SCLC (3L)	Checkmate-331 (2L) & 451 (1L)	(NA - already withdrawn)	Withdrawn 29 Dec 2020	No
Imfinzi (Astrazeneca)	Urothelial bladder cancer (2L)	Danube (1L, tremelimumab combo)	(NA - already withdrawn)	Withdrawn 22 Feb 2021	Nile (tremelimumab combo)

Source: Company information

In other regulatory developments Bristol Myers Squibb's Opdivo got its third US endorsement as adjuvant treatment – a setting that is [vital if Opdivo is to regain lost ground on Keytruda](#).

On August 20 the FDA approved Opdivo for adjuvant high-risk urothelial carcinoma on the basis of the Checkmate-274 study, which at this year's Asco-GU meeting was reported as showing the drug improving disease-free survival to 21.0 months, versus 10.9 months for placebo recipients, amounting to a 30% reduction in disease recurrence at any point.

Interestingly, Opdivo's updated label makes no mention of muscle-invasive disease, the specific setting for the Checkmate-274 data. The approval is especially important since Roche's rival [Tecentriq failed Imvigor-010](#), a separate trial as adjuvant therapy in high-risk, muscle-invasive urothelial carcinoma.

Two months earlier the US regulator had greenlit Opdivo for adjuvant treatment of oesophageal/gastroesophageal junction cancer on the basis of Checkmate-577. The Bristol drug's other approved perioperative use is for adjuvant melanoma, dating back to 2017.

Keytruda is of course also in the perioperative game, its own 2019 adjuvant melanoma label being supplemented in July with US approval for neoadjuvant and adjuvant triple-negative breast cancer.

This is backed by the [controversially designed Keynote-522 trial](#), which is very similar to Tecentriq's Impassion-031 trial, which like Keynote-522 has yielded positive pCR data but – unlike the Merck study – has yet to show an effect on its much more important event-free survival endpoint.

Recent approvals of anti-PD-1/PD-L1 MAbs

Approval date	Region	Therapy	Indication	Supporting trial(s)
Annik/penpulimab (Akeso)				
5 Aug 2021	China	Monotherapy	3rd-line classical Hodgkin's lymphoma	Unclear
Jemperli (Glaxosmithkline/Anaptysbio)				
19 Aug 2021	US	Monotherapy	2nd-line dMMR solid tumours	Garnet study (AA)
Imfinzi (Astrazeneca)				
19 Jul 2021	China	Chemo combo	1st-line SCLC	Caspian study
Tecentriq (Roche)				
31 Jul 2020	US	Cotellic+Zelboraf combo	1st-line Braf +ve melanoma	Imspire-150 study
Opdivo (Bristol-Myers Squibb/Ono)				
25 Aug 2021	Japan	Cabometyx combo	1st-line renal cell carcinoma	Checkmate-9ER study
20 Aug 2021	US	Monotherapy	Adjuvant high-risk urothelial carcinoma	Checkmate-274 study
30 Jul 2021	EU	Monotherapy	Adjuvant oesophageal/GEJ cancer	Checkmate-577 study
Keytruda (Merck & Co)				
26 Aug 2021	Japan	Monotherapy	1st-line MSI-H or mismatch repair-deficient colorectal cancer	Keynote-177 study
26 Aug 2021	Japan	Chemo combo	1st-line PD-L1 +ve ($\geq 10\%$) triple-negative breast cancer	Keynote-355 study
11 Aug 2021	US	Lenvima combo	1st-line renal cell carcinoma	Keynote-581/Clear study
27 Jul 2021	US	Chemo+monotherapy	Neoadjuvant + adjuvant triple-negative breast cancer	Keynote-522 study
6 Jul 2021	US	Monotherapy	Locally advanced cutaneous squamous cell carcinoma not eligible for surgery/RT	Keynote-629 study

Other recent US approvals were rounded out by Keytruda's combo with Lenvima in front-line renal cell carcinoma, cementing Merck's lead in this fast-changing space, and a nod for Tecentriq plus Cotellic and Zelboraf in first-line Braf-positive melanoma.

Glaxosmithkline/Anaptysbio's Jemperli, meanwhile, had its initial second-line MMR-deficient endometrial cancer label expanded to comprise all second-line dMMR solid tumours, still on an accelerated basis and backed by the same Garnet trial. This drug's big threat is Keytruda, which has a March 28 2022 Pdufa date for a US regulatory decision in second-line MSI-high/dMMR endometrial carcinoma, backed by Keynote-258's cohorts D and K, to be presented in full at Esmo.

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