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LAG-3 IMMUNOTHERAPY

Global Webcast Slides

Interim overall survival results in metastatic breast cancer from the randomized, placebo controlled and double-blinded Phase IIb (AIPAC) trial

(ASX: IMM, NASDAQ: IMMP)

Notice: Forward Looking Statements

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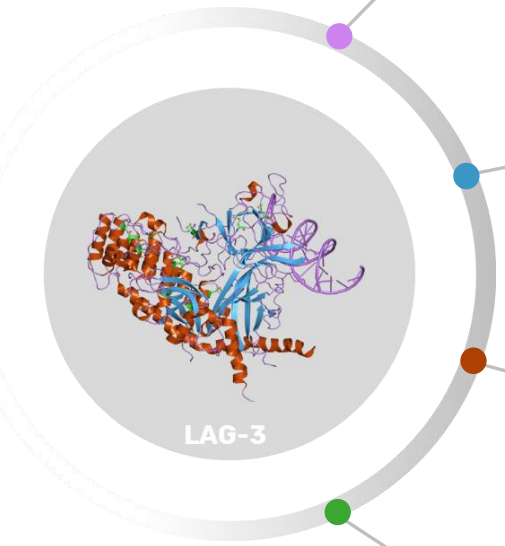
Overview

Immutep

is an innovative biotechnology company developing novel immunotherapies for cancer and autoimmune diseases



Global leadership position

in LAG-3 with four related product candidates in immuno-oncology and autoimmune diseases

Clinical Potential

Immutep's product candidates have demonstrated clinical potential in a range of indications with high unmet need

Prof. Frédéric Triebel
MD PhD,
CSO / CMO

Discovered the LAG-3 immune control mechanism

immutep
Efti
APC activator

Partnered with NOVARTIS
LAG525
Antagonistic mAb

immutep
IMP761
Agonistic mAb

Partnered with gsk
GSK'781
Depleting mAb

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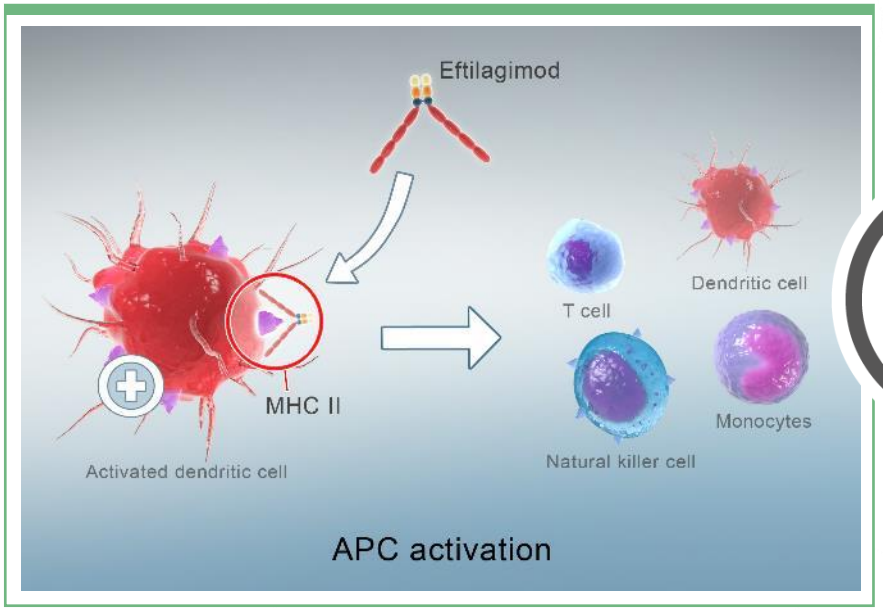
Eftilagimod Alpha (efti or IMP321)

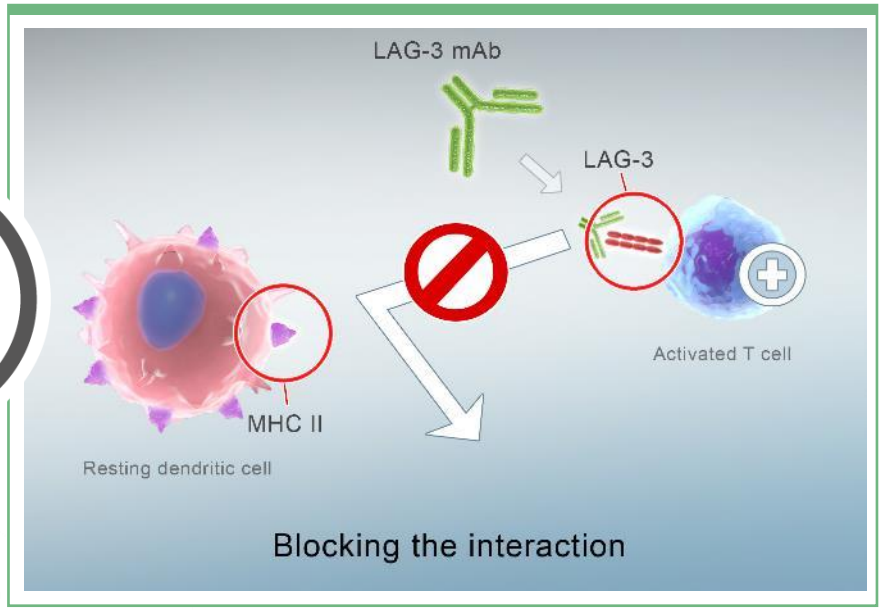
Efti: an Innovative LAG-3 IO Product Candidate

- the only APC (MHC II) targeting LAG-3 product candidate currently in clinical development
- a unique approach ("turning cold tumors into hot tumors" with LAG-3)
- synergistic with other therapeutic agents and modalities e.g. IO agents or chemotherapy

"PUSHING THE ACCELERATOR ON IMMUNE RESPONSES"



"RELEASING THE BRAKE ON THE T CELL"



Efti is an **MHC II agonist**

APC activator

- boosts and sustains cytotoxic T cell responses
- activates multiple immune cell subsets

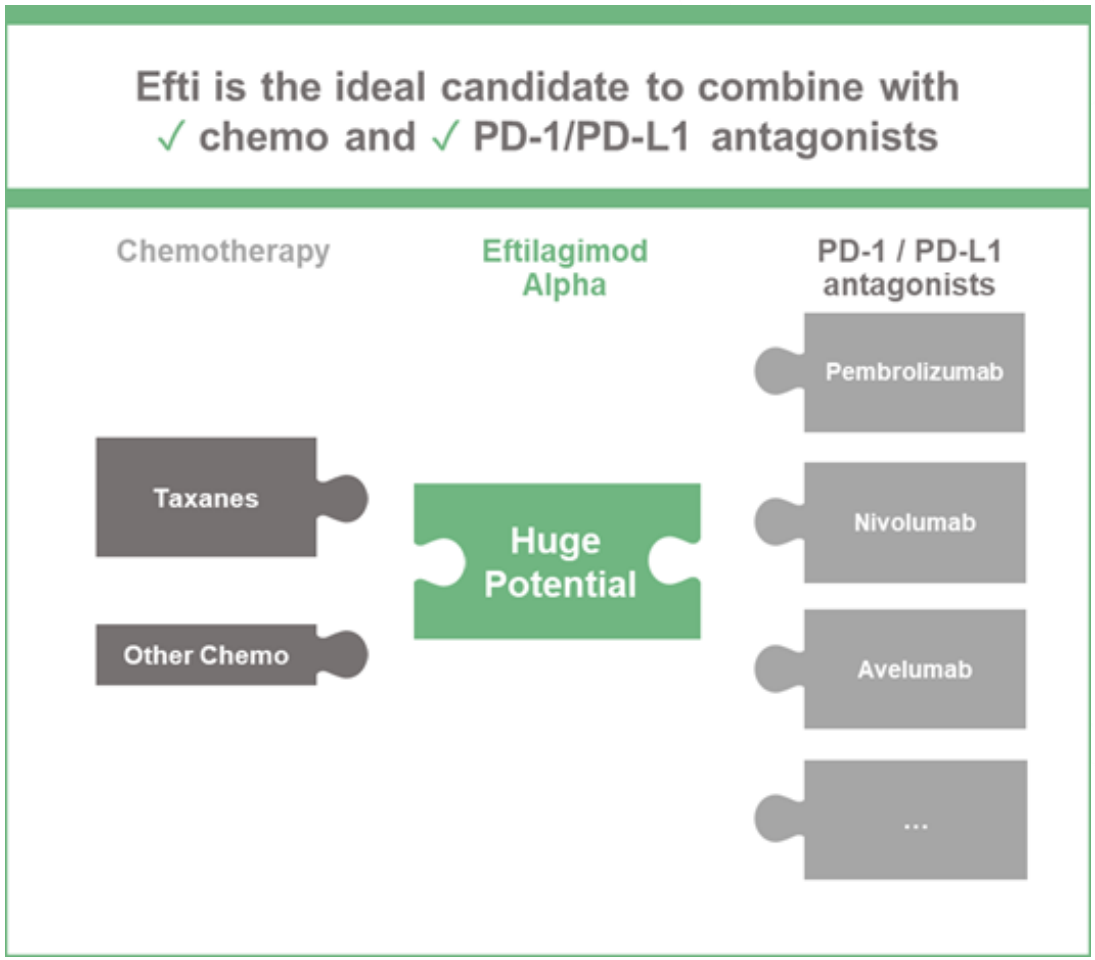
LAG-3 antagonist, or blocking, antibodies:

Immune checkpoint inhibitor

- increases cytotoxicity of pre-existing CD8 T cell response

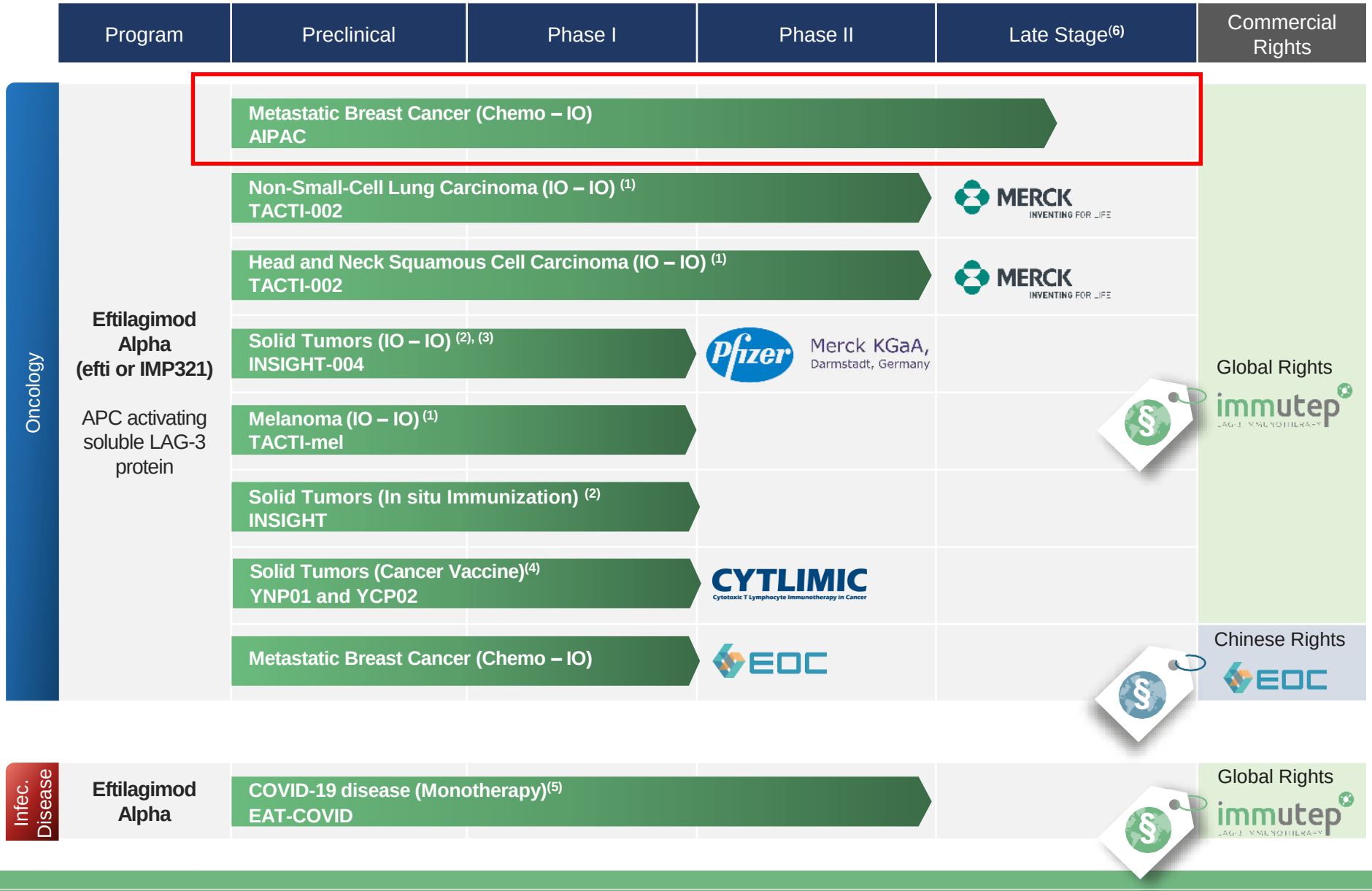
Efti: Potential Pipeline in a Product

Potential for use in various combination settings



- Unique MHC II agonist
- Good safety profile
- Encouraging efficacy data
- Low cost of goods
- Unique protective IP positioning (unlike ICI mAbs)

Efti: Immunotherapy Pipeline*



Notes

* Information in pipeline chart current as at December 2020

(1) In combination with KEYTRUDA® (pembrolizumab) in non-small cell lung carcinoma ("NSCLC") or head and neck carcinoma ("HNSCC")

(2) INSIGHT Investigator Initiated Trial ("IIT") is controlled by lead investigator and therefore Immutep has no control over this clinical trial

(3) In combination with BAVENCIO® (avelumab)

(4) Conducted in Japan. Immutep has no control over this trial.

(5) Investigator Initiated Trial ("IIT") is controlled by lead investigator and therefore Immutep has no control over this clinical trial. Conducted in CZ.

(6) Late stage refers to Phase IIb clinical trials or more clinically advanced clinical trials

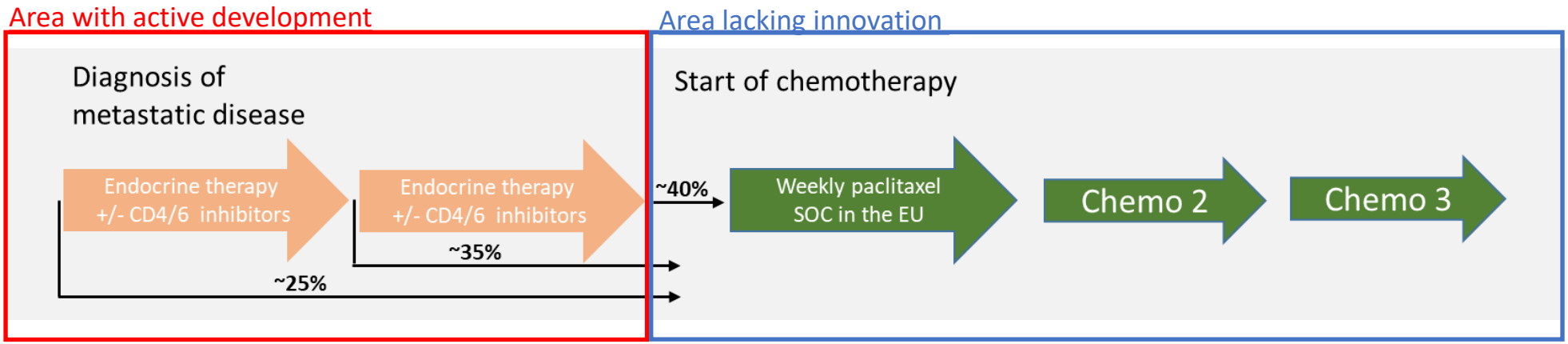
AIPAC Update:

Exciting Interim OS Results

Goal: Improving OS while maintaining QoL in HR+/HER2– MBC patients

Epidemiology:

- More than 2 million breast cancer (~70% HR+/HER2--) diagnoses per annum worldwide(1)
- ~24% of all new cancer diagnoses among women and ~12% in the total population(1)
- Up to 450,000 develop metastatic disease and are eligible to receive chemotherapy(1) (2)



Current Status:

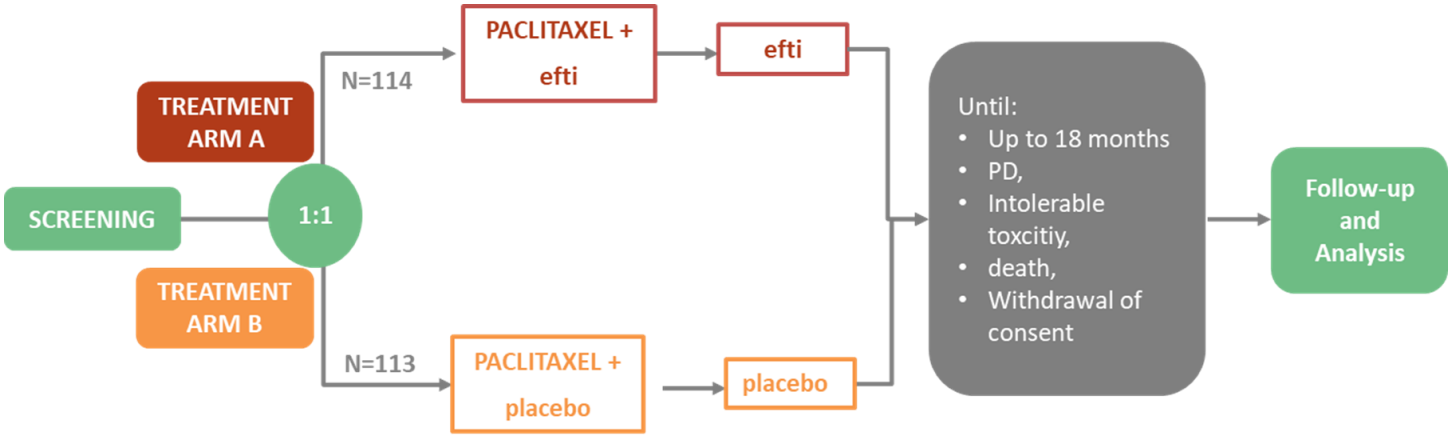
- despite all changes for early treatment lines → no improvement for patients receiving first-line chemotherapy
- number of pre-treatments have increased over recent years → patients receive chemo at a later stage → shortened expected benefit
- taxane monotherapy widely used in first-line chemotherapy setting
- no active IO approved / or in late-stage trials

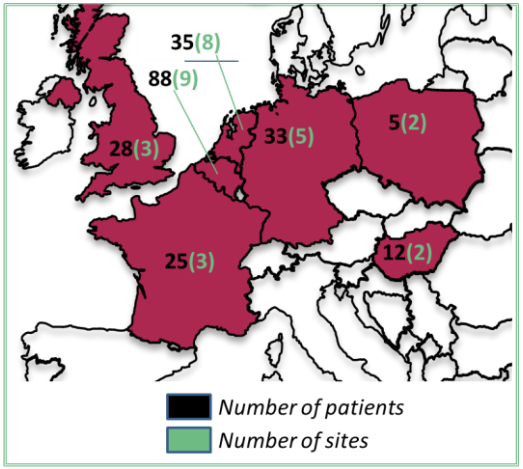
Notes
(1) Source: WHO Global Cancer Observatory March 2019 and Informa Intelligence October 2020
(2) Wang et al. BMC Cancer (2019) 19:1091

MBC – metastatic breast cancer BC – breast Cancer

Efti: AIPAC (Phase IIb) design

AIPAC: Active Immunotherapy PAClitaxel in HER2^{-}/ HR^{+} metastatic breast cancer (MBC)





Primary endpoint includes (presented end of Mar 20):

- Assessment of Progression-Free Survival (PFS) (note: no hypothesis testing)

Secondary endpoints include:

- Overall Survival (OS) – **presented Dec 2020**
- Safety and tolerability
- Overall Response rate (ORR) and other efficacy parameter
- Biomarker and Immune Monitoring

Fact sheet

- ✓ Conducted in 7 EU countries
- ✓ Local and blinded independent central read
- ✓ LPI enrolled Jun 2019
- ✓ Primary analysis PFS (immature OS) March 2020
- ✓ Follow-up 1 analysis OS Sep 2020 (SABCS Dec 2020) – ~60% OS events
- ❖ 2nd OS follow-up analysis planned mid of 2021

Notes:
ORR – overall response rate, DCR – disease control rate, PFS – progression free survival, OS – overall survival, QoL – Quality of life

AIPAC Phase IIb Clinical Results

Baseline Characteristics

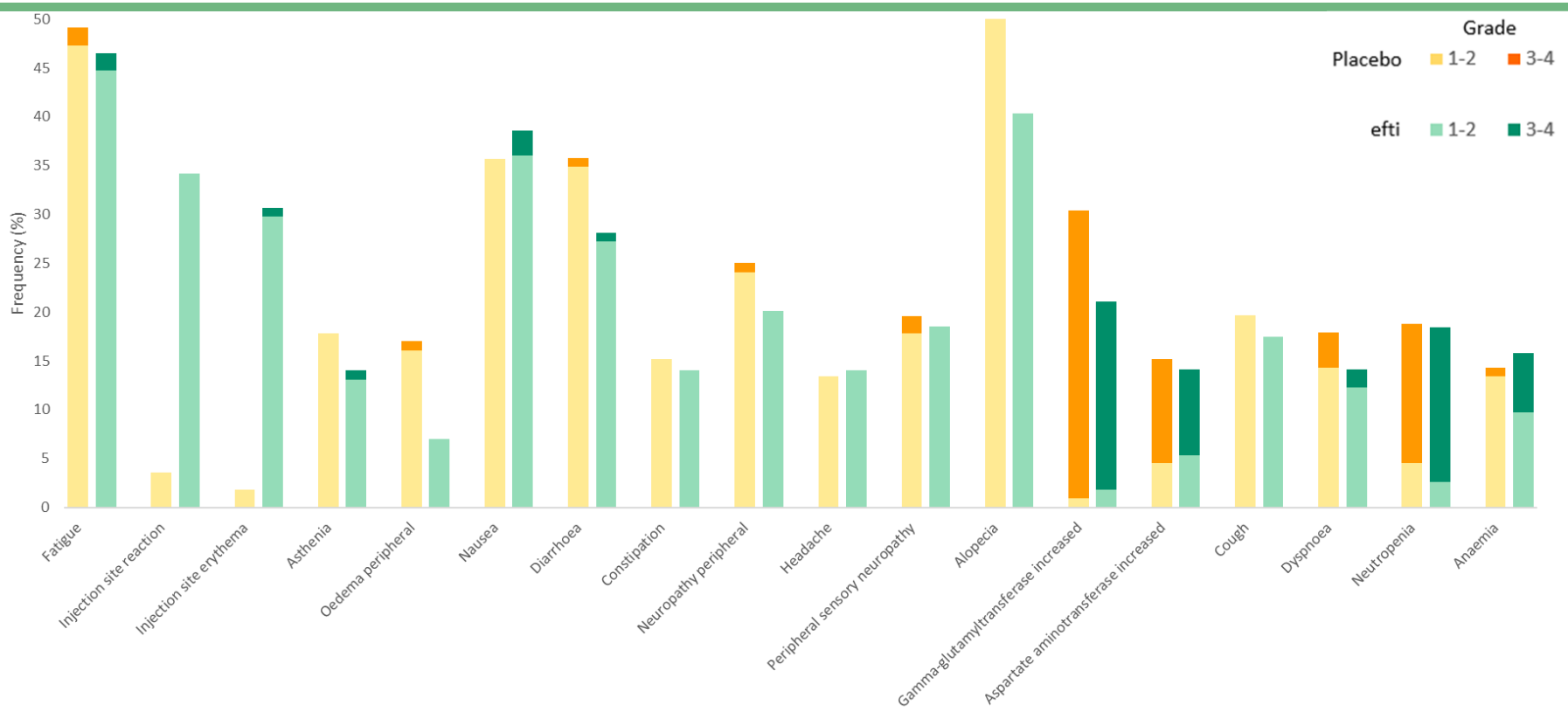
	Paclitaxel + Efti N=114	Paclitaxel + Placebo N=112
Median age, years (range) < 65 years	58 yrs (24-87) 66.7%	61 yrs (35-79) 63.4%
ECOG 0	60.5%	62.5%
% visceral disease	90.4%	92.9%
% pre-treated with CDK4/6 for met disease	43.9%	42.9%
One or more systemic therapies for metastatic disease	68.4%	71.4%
Tumor type (central pathology) Luminal A Luminal B	 34.1%* 48.8%*	 36.7%* 49.4%*
Monocytes at baseline < 0.25 x 10^9/L	21.9%	19.8%
No prior treatment with taxanes	55.3%	61.6%

- ***Well balanced treatment groups***
- ***Very late stage disease and large proportion pre-treated with CDK4/6***

Notes:
* Reference number of patients different as not all patients were assessed centrally

AIPAC Phase IIb Clinical Results

Safety - Most common (≥15%) TEAEs in any arm



Summary of treatment-emergent adverse events (TEAEs) ¶	Paclitaxel + efti N=114, n (%)	Paclitaxel + Placebo N=112, n (%)
≥1 TEAE	113 (99.1)	112 (100)
≥1 TEAE leading to death	2 (1.8)	3 (2.7)
≥1 TEAE leading to efti/placebo discontinuation	6 (5.3)	7 (6.3)
≥1 Grade ≥3 TEAE	78 (68.4)	73 (65.2)

- no fatal TEAE related to efti.
- 3 pts discontinued due to hypersenstivity reactions developing after efti injections and 4 pts due to paclitaxel-induced hypersensitivity, respectively
- Most common efti related adverse event was any kind of local injection site reaction up to grade 3 reported in 74 (64.9%) pts in the efti arm

Notes:
ORR – overall response rate, DCR – disease control rate, PFS – progression free survival, OS – overall survival, QoL – Quality of life

HR+/HER2− MBC Treatment Landscape

Conclusions

Paclitaxel

Weekly paclitaxel well established standard as main chemotherapy & not expected to change soon

Lack of Innovation for a meaningful Population

No innovation for a meaningful patient population since decades & no other significant innovations in the pipeline

High Unmet Medical Need

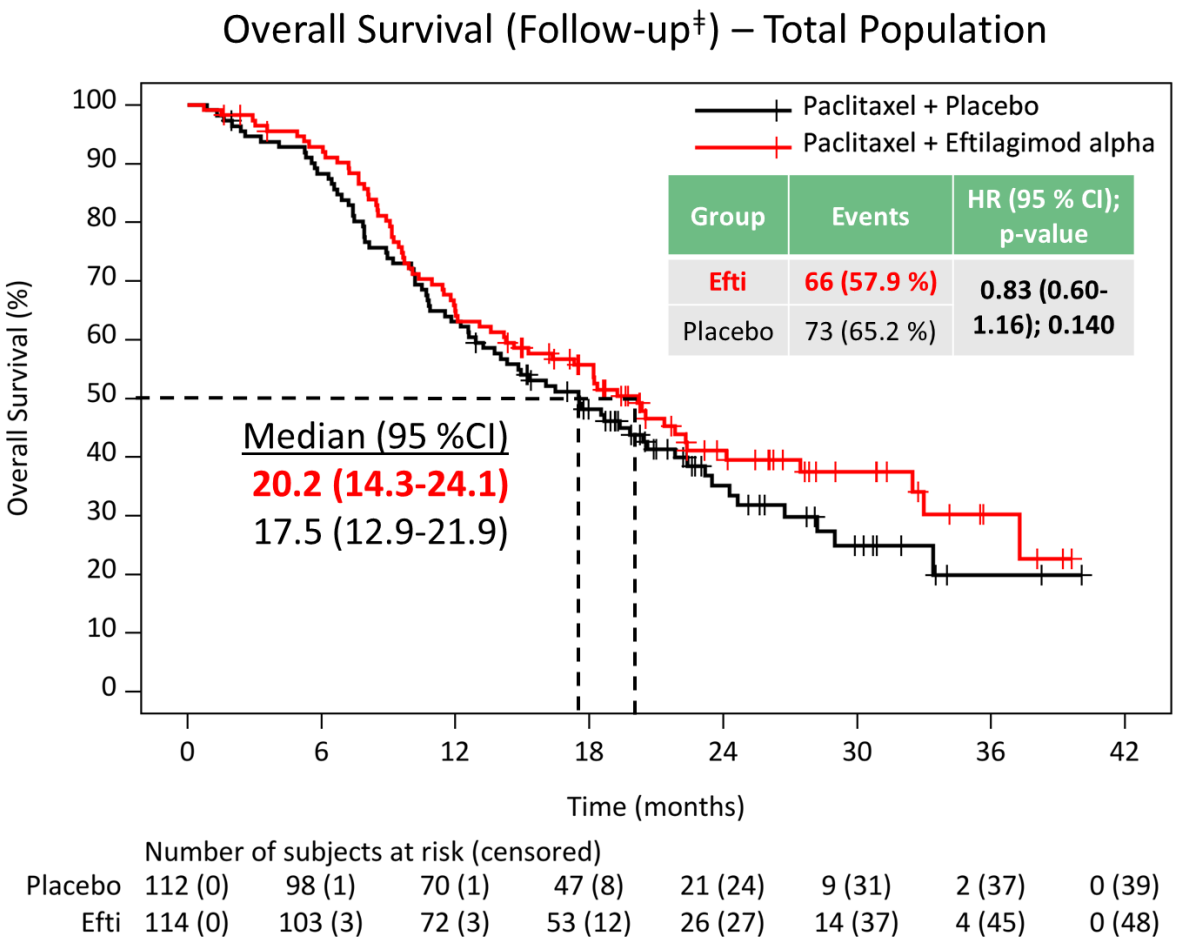
efti addresses high unmet medical need with a good safety profile

AIPAC Phase IIb Clinical Results

Overall Survival – FU1 (60% events; cut-off: Sep 20)

Improving trend for the overall population (IIT) as data matures

Currently 2.7 months difference in median OS



Post-study treatment

was similar with 80.7% (efti) and 83.9% (placebo) receiving any post study systemic anticancer therapy. Vast majority received **chemotherapy**: 64.0% (efti) vs. 69.6% (placebo)

Prior CDK 4/6

have negative impact on OS in placebo group (median reduced from 20.0 to 14.9 months), but **not** in the efti group (median OS 20.9 vs. 20.4 months)

CDK4/6 are now standard and most patients will have received it in future studies / real world → favorably for efti

Quality of Life (QLQ-C30)

Significant deterioration of overall QoL in the placebo group at week 25, which was **not** observed in the efti group

Very important for reimbursement → favorably for efti

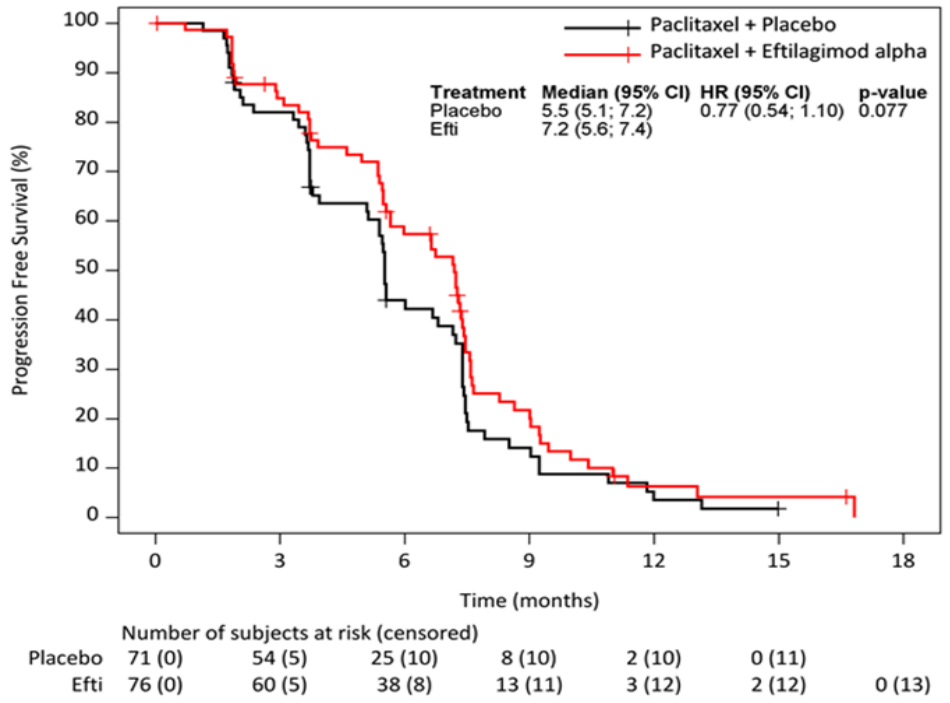
AIPAC Phase IIb Clinical Results

Subgroup 1: < 65 years – PFS / OS / ORR

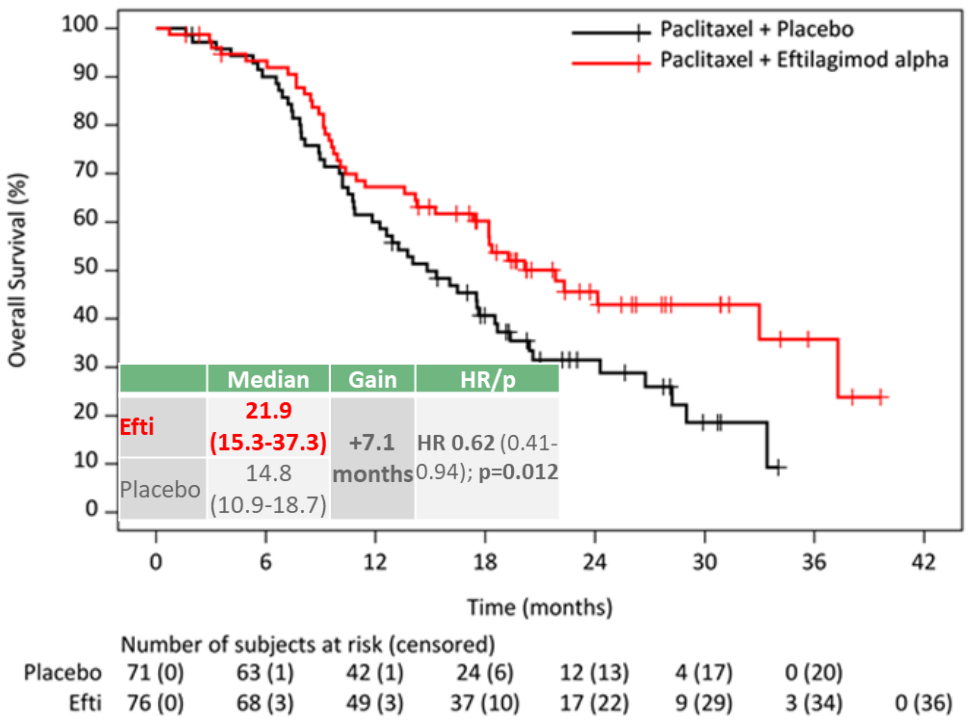
Clinically meaningful absolute and relative improvement for all efficacy parameters, significance for OS

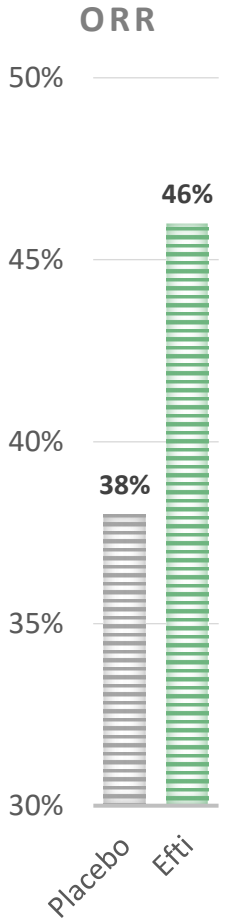
ESMO scale of magnitude* = level 4 (makes reimbursement very likely)

Patients with age < 65 yrs - PFS -



Patients with age < 65 yrs - OS -





Notes:

* used for reimbursement in Europe: https://www.esmo.org/guidelines/esmo-mcbs/scale-evaluation-forms-v1.0-v1.1

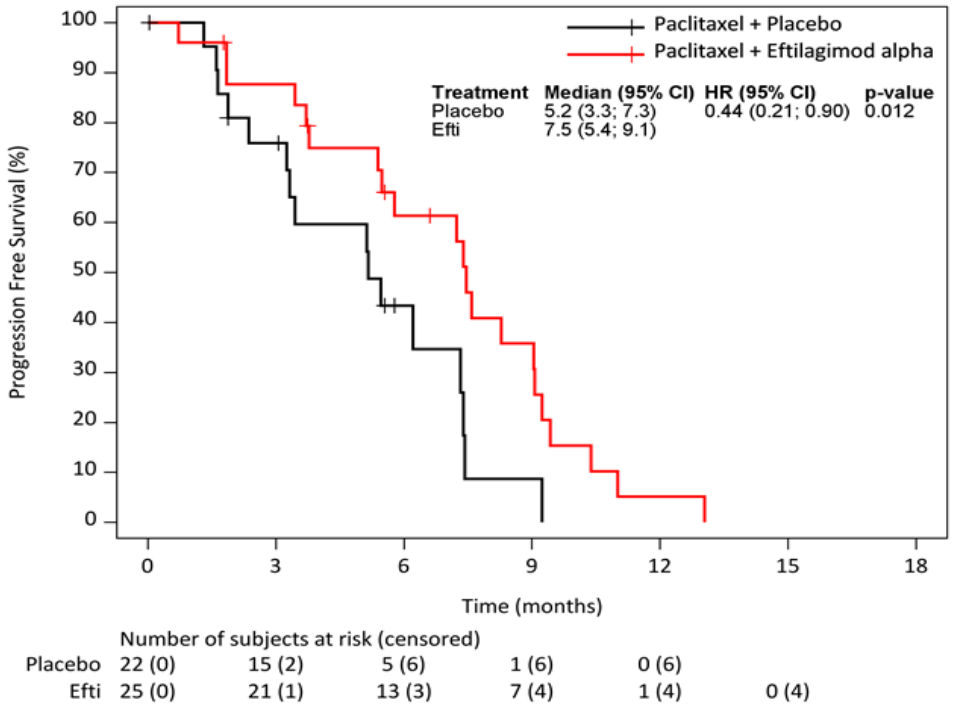
AIPAC Phase IIb Clinical Results

Subgroup 2: Low Monocytes – PFS / OS / ORR

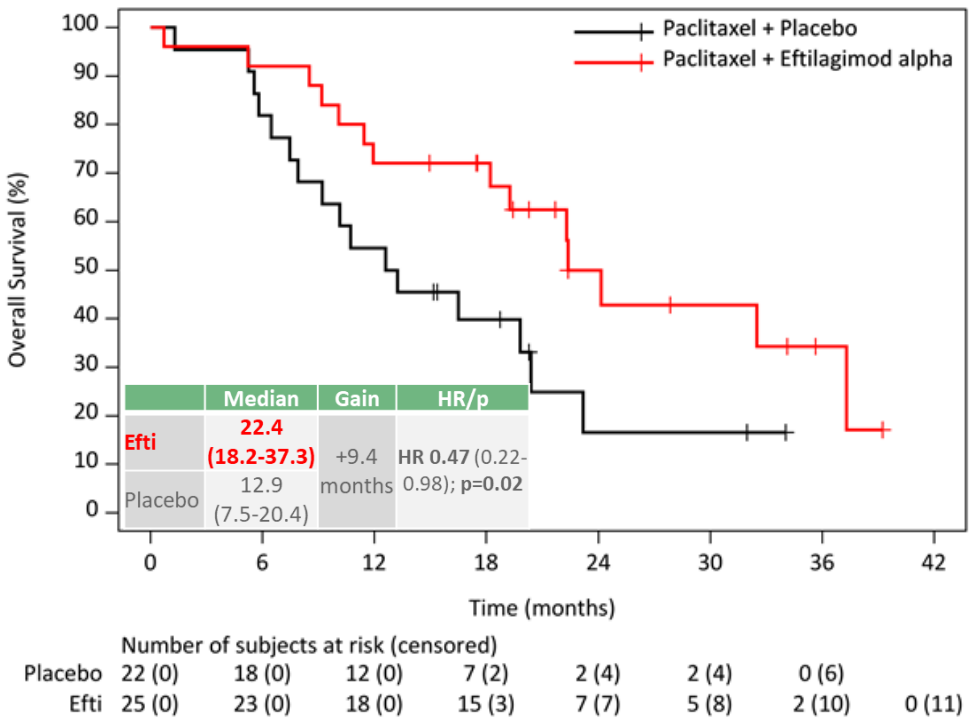
Clinically meaningful, absolute and relative improvement for all efficacy parameters, significance for PFS/OS

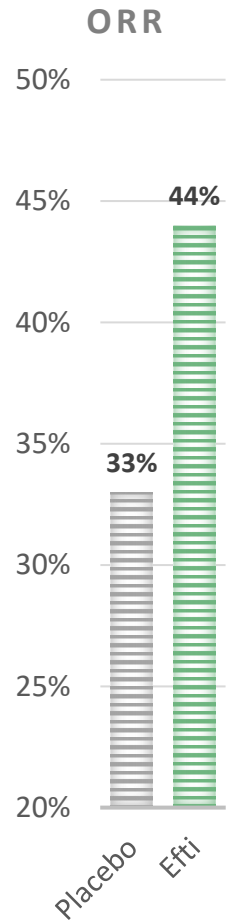
ESMO scale of magnitude* = level 4 (makes reimbursement very likely)

Patients with low monocytes - PFS -



Patients with low monocytes - OS -





Notes:

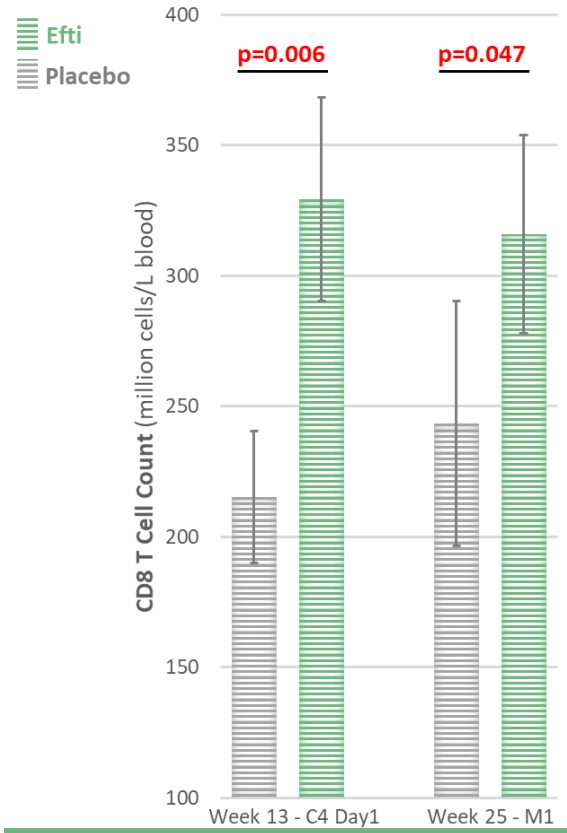
* used for reimbursement in Europe: https://www.esmo.org/guidelines/esmo-mcbs/scale-evaluation-forms-v1.0-v1.1

AIPAC Phase IIb Clinical Results

Immune Monitoring on Fresh Blood (up to 70 pts)

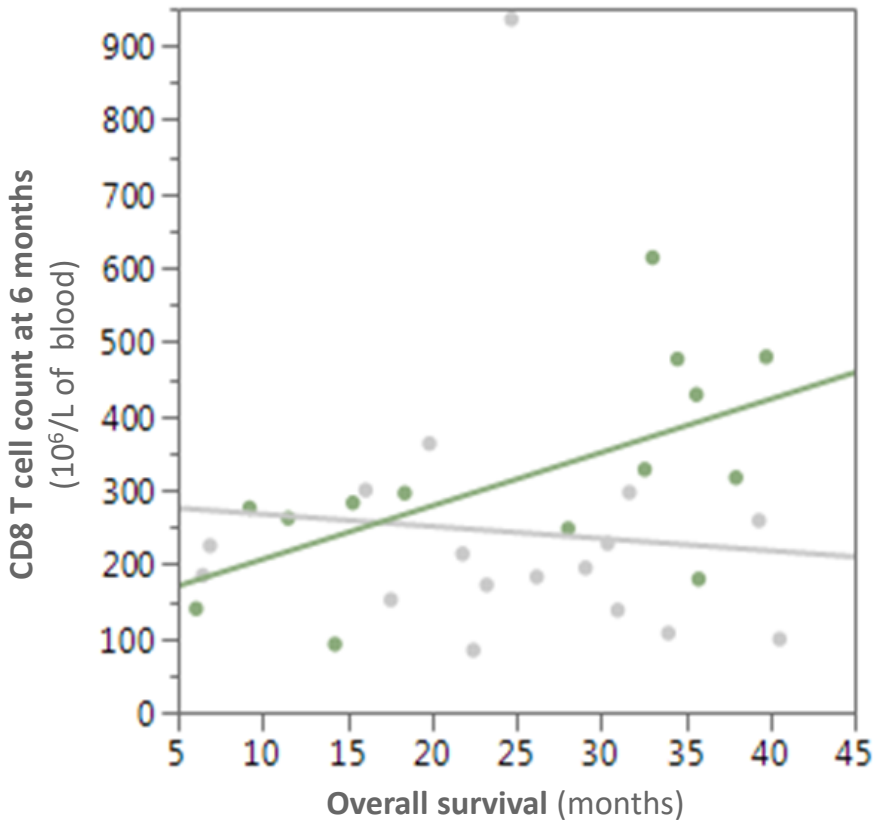
Cytotoxic CD8⁺ T Cell count over time

(Mean ± SEM million cells/L of blood; p-value Wilcoxon)



Number of T cells increased in efti group, especially cytotoxic CD8⁺ → Proof of Principle.

Stat. significant (p=0.020)
Correlation: OS and cytotoxic CD8⁺ T cell count



Increased number of cytotoxic CD8⁺ T Cells correlated with improved OS in the Efti arm → Proof of Concept.

AIPAC Phase IIb – Benchmarking Breast Cancer

Case study Margetuximab and Atezolizumab

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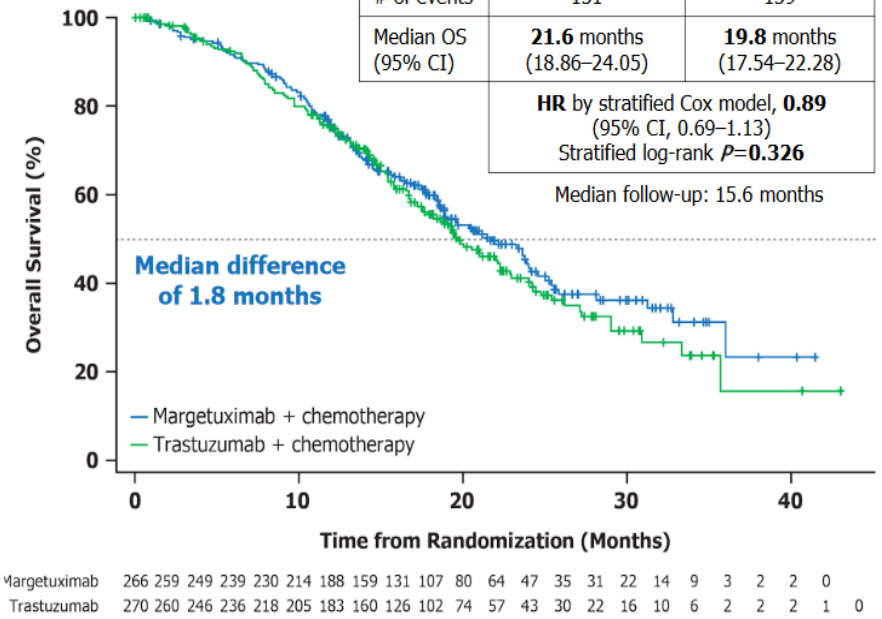
SOPHIA trial (HER2+ MBC)

- **OS: median** 21.6 vs. 19.8 months (immature); HR 0.89
- **BLA submitted** → under review by the U.S. FDA

Second Interim OS Analysis (Sep-2019 Cutoff)[b]

	Margetuximab + Chemotherapy (n=266)	Trastuzumab + Chemotherapy (n=270)
# of events	131	139
Median OS (95% CI)	**21.6** months (18.86–24.05)	**19.8** months (17.54–22.28)
	HR by stratified Cox model, **0.89** (95% CI, 0.69–1.13) Stratified log-rank *P*=**0.326**	

Median follow-up: 15.6 months



Margetuximab	266	259	249	239	230	214	188	159	131	107	80	64	47	35	31	22	14	9	3	2	2	0
Trastuzumab	270	260	246	236	218	205	183	160	126	102	74	57	43	30	22	16	10	6	2	2	2	1	0

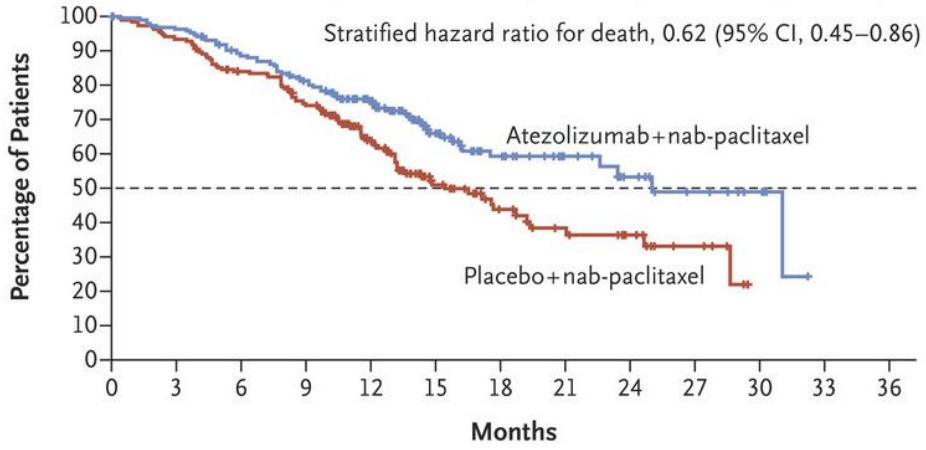
[a]OS analysis performed as of October 10, 2018 data cutoff, after 158 (41%) of 385 events needed for final OS analysis had occurred.
[b]OS analysis performed as of September 10, 2019 data cutoff, after 270 (70%) of 385 events needed for final OS analysis had occurred.

IMPOWER 130 (TNBC)

- OS: median 23 vs. 18 months (HR 0.62) limited to PD-L1+
- **Approved** for PD-L1 positive pts despite mistakes in design

D Overall Survival in the PD-L1–Positive Subgroup

	No. of Events/ No. of Patients	Median Overall Survival (95% CI) *mo*	2-Yr Rate of Overall Survival (95% CI) %
Atezolizumab+Nab-Paclitaxel	64/185	25.0 (22.6–NE)	53.5 (42.3–64.6)
Placebo+Nab-Paclitaxel	88/184	15.5 (13.1–19.4)	36.6 (26.4–46.7)



No. at Risk													
Atezolizumab+ nab-paclitaxel	185	177	160	142	113	61	36	22	15	9	5	NE	NE
Placebo+ nab-paclitaxel	184	170	147	129	89	44	27	19	13	6	NE	NE	NE

Notes:
Margetuximab: http://ir.macrogenics.com/news-releases/news-release-details/macrogenics-presents-results-sophia-study-margetuximab-patients
Atezolizumab: tecentriq-h-c-004143-x-0017-epar-assessment-report-extension_en

AIPAC Phase IIb Clinical Results

Benchmarking conclusions:

General Regulatory

OS (with good QoL) is the most important endpoint

Recent Approvals in MBC

therapies were or are supposed to be approved with a similar or less OS benefit compared to the current data presented

Margetuximab Case

In case of high unmet medical need → small differences in the correct endpoint maybe sufficient for BLA

Atezolizumab Case

Subgroups are important even retrospectively; HR 0.7 in a subgroup is meaningful → design / testing strategy for clinical development crucial

Notes:

Margetuximab: http://ir.macrogenics.com/news-releases/news-release-details/macrogenics-presents-results-sophia-study-margetuximab-patients

Atezolizumab: tecentriq-h-c-004143-x-0017-epar-assessment-report-extension_en

AIPAC Phase IIb Clinical Results
Summary and Conclusions

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First time

an APC activator shows meaningful increase in OS in a randomized setting

Proof of Principle

Significant increase in cytotoxic T cell numbers compared to placebo

Proof of Concept

Prolonged OS in the overall population and clearly linked to pharmacodynamic effect (increase in CD8 T cells)

Path Forward

Regulatory (FDA and EMA) discussions are prioritized now

Update on Anti-PD-1 Combination

Efti plus anti-PD-1/PD-L1 combination

Status after SITC

1st line NSCLC

- Clearly high response rates compared to historical KN-studies[1,2].
- Especially in patients with moderate (< 50% TPS) PD-L1 expression on the tumor

PD-1-resistant/refractory/insensitive patients

- Confirmed PR and long term (6+ months) stabilization in low PD-L1 expressing PD-X resistant patients with 2nd line NSCLC
- Multiple responses in patients with metastatic melanoma sub optimally responding to pembrolizumab including 1 pt with a confirmed CR after progression on pembro
- Interesting single cases (PRs) in combination with avelumab (PD-L1 antagonist) in ICI insensitive tumors like cervical, mesothelioma and anal cell carcinoma

HNSCC

- Durable, deep responses in a very challenging patient population; responses in low PD-L1 expressors with a favorable trend compared to KN-studies (ORR ~15%) [3,4]

Efti warrants late stage clinical development in combination with PD-1/PD-L1 antagonists

Notes:
1. Mok T, et al. Lancet 2019; 393: 1819-1830. (KN-042)
2. Reck M, et al. N Engl J Med. 2016; 375:1823-1833. (KN-024)
3. Seiwert T Y et al, 2016; Lancet 17: 956-965. (KN-012);
4. Cohen E, et al. Lancet 2019; 393: 156-167. (KN-040)

Outlook

2020 & 2021 News Flow*

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2020

- ✓ **AIPAC** – PFS, ORR, Overall Survival delivered
- ✓ US **IND** for MBC
- ✓ **TACTI-002** – recruitment & data delivered e.g. at ASCO, EMSO & SITC for
  - ✓ 1st line NSCLC
  - ✓ 2nd line NSCLC
  - ✓ 2nd line HNSCC
- ✓ Support of global **COVID** efforts (Phase IIb)
- ✓ New **partnerships**: LabCorp
- ✓ Progress from **IMP761**
- ✓ Expansion of **IP portfolio**
- ✓ Strong **financial position**

2021

- ❑ Data from **TACTI-002** Parts A, B and C
- ❑ Recruitment & first data from **TACTI-002** Part A extension
- ❑ Final data from **AIPAC**: 2nd OS follow up
- ❑ Final data from **INSIGHT-004**
- ❑ Start & ongoing recruitment of **TACTI-003**
- ❑ Ongoing **regulatory** engagement
- ❑ Updates from **IMP761**
- ❑ Progress from partnered programs (e.g. clinical proof of concept expected from GSK'781 in H1 2021)

Notes:
*The actual timing of future data readouts may differ from expected timing shown above. These dates are provided on a calendar year basis.

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Thank you!