Novartis AG
Investor Relations

ASCO Investor Event

Jun 02, 2019
Chicago, USA

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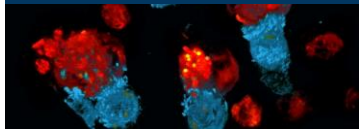
Deep pipeline across four distinct platforms is expected to continue driving differentiation and growth

	Targeted therapies (TT)	Radioligand therapies (RLT)	Cell & Gene	Immunotherapies (IO)
				
Anchor commercial assets	PROMACTA® (eltrombopag) 25mg, 50mg, 75mg tablets; JAKAVI® ruxolitinib; PIQRAY® (alpelisib) tablets; KISQALI® ribociclib; Tafinlar® (dabrafenib) + Mekinist® (trametinib)	Advanced Accelerator Applications LUTATHERA®	KYMRIAH® (tisagenlecleucel) Suspension for IV infusion	
Select pipeline assets[1] and opportunities	**ABL001** in CML (3rd line & 1st line add-on) **Piqray®,** in HER2+ advanced breast cancer, TNBC **INC280** in NSCLC, single agent **SEG101** in sickle cell disease	**177Lu PSMA-617** in prostate cancer **177Lu PSMA-R2** in prostate cancer **177Lu NeoB** in breast cancer, GIST, GBM, neuroblastoma, ovarian, head & neck, esophageal	**Kymriah®** in – r/r DLBCL in 1st relapse – r/r follicular lymphoma – combinations (pembro; ibrutinib) in r/r DLBCL – 1st line high risk pediatric and young adult ALL – Adult ALL – CLL **Other targets:** BCMA&CD19, CD22&CD19, CD123, EGFRv3	**ACZ885** in – adjuvant NSCLC – 1st line NSCLC – 2nd line NSCLC **PDR001+Tafinlar®+Mekinist®** in metastatic melanoma **PDR001+LAG525+carboplatin** in TNBC **PDR001+INC280** in 2nd line NSCLC

Projects included are those with planned filings in US and/or EU.

1. All select pipeline assets are either investigational or being studied for (a) new use(s). Efficacy and safety have not been established. There is no guarantee that they will become commercially available for the use(s) under investigation.

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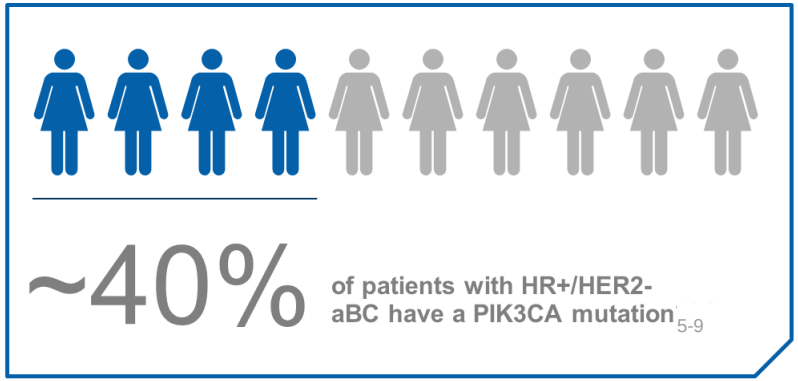
Next pioneering medicine, Piqray®, the first and only therapy for HR+/HER2- aBC patients with PIK3CA mutation



- Received FDA approval on May 24, for use in combination with fulvestrant for the treatment of postmenopausal women, and men, with HR+/HER2-, PIK3CA-mutated, advanced or metastatic breast cancer, as detected by an FDA-approved test following progression on or after endocrine-based regimen[1]
- ~40% of HR+/HER2- advanced breast cancer patients may face worse disease prognosis due to presence of PIK3CA mutations [5-9]
- Nearly doubled median PFS in HR+/HER2- aBC patients with a PIK3CA mutation compared to fulvestrant alone[1-4]

The most common adverse reactions including laboratory abnormalities on the alpelisib plus fulvestrant arm were increased glucose, increased creatinine, diarrhea, rash, decreased lymphocyte count, increased gamma glutamyl transferase, nausea, increased alanine aminotransferase, fatigue, decreased hemoglobin, increased lipase, decreased appetite, stomatitis, vomiting, decreased weight, decreased calcium, decreased glucose, prolonged activated partial thromboplastin time (aPTT), and alopecia. Full safety can be found at https://www.pharma.us.novartis.com/sites/www.pharma.us.novartis.com/files/piqray.pdf

1.Piqray (alpelisib) Prescribing Information. East Hanover., New Jersey, USA: Novartis Pharmaceuticals Corporation; May 2019. 2.André F, Ciruelos E, Rubovszky G. Alpelisib for PIK3CA-Mutated, Hormone-Receptor-Positive Advanced Breast Cancer. N Eng J Med 2019. 3.André F, Ciruelos EM, Rubovszky G et al. Alpelisib (ALP) + fulvestrant (FUL) for advanced breast cancer (ABC): Results of the phase III SOLAR-1 trial. Annals of Oncology, Vol 29, Suppl 8, October 2018, Abstract LBA3_PR.4.Juric D, Ciruelos EM, Rubovszky G et al. Alpelisib (ALP) + fulvestrant (FUL) for advanced breast cancer (ABC): Phase 3 SOLAR-1 trial results. Presented at the San Antonio Breast Cancer Symposium (SABCS) (Abstract #GS3-08) on December 6, 2018. 5.Tolaney S, Toi M, Neven P, et al. Presented at: 2019 American Association for Cancer Research (AACR) Annual Meeting; March 29-April 3, 2019; Atlanta, GA. 6.Di Leo A, Johnston S, Seok Lee K, et al. Lancet Oncol. 2018;19(1):87-100. 7.Moynahan ME, Chen D, He W, et al. Br J Cancer. 2017;116(6):726-730002[E] 8.The Cancer Genome Atlas Network. Comprehensive molecular portraits of human breast tumours. 2012;490(7418):61-70. 9.Sobhani N, Roviello G, Corona SP et al. The prognostic value of PI3K mutational status in breast cancer: a meta-analysis. J Cell Biochem. 2018;119(6):4287-4292

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Launch preparedness of Piqray® in the US

- First new drug application approved under the FDA Oncology Center of Excellence Real-Time Oncology Review pilot program
- Launched with FDA approved companion diagnostic for PIK3CA testing (Qiagen)
- US supply ready for commercial sale
- Entered into agreement with Foundation Medicine to develop plasma and tissue test
- Engaged with payers covering over 80% of the target population in the US
- Continuing to investigate Piqray® in other PIK3CA mutation driven disease states

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ASCO 2019: high quality scientific content aligned with our prioritization on Novartis strategic brands

37*	abstracts have been accepted
14	Novartis brands/ compounds with data being presented
7	oral presentations

*Excludes IITs and third party

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Kisqali®: the first and only CDK4/6 inhibitor to achieve a statistically significant OS result

KISQALI® ribociclib

MONALEESA-7 OS Data

- Kisqali® is the only CDK 4/6 inhibitor proven in a clinical trial to help premenopausal women with HR+/HER2- mBC live longer
- Kisqali® demonstrated a nearly 30% reduction in the risk of death
- After 42 months of follow-up, the survival rate was 70% for women who received Kisqali® combination therapy compared to 46% for women who received endocrine therapy alone
- Kisqali® delayed time to subsequent chemotherapy and improved or maintained quality of life

Significance of OS

- The majority of oncologists and women surveyed report that OS is their #1 treatment goal
- In nearly 25 years, 5-year survival rates for MBC have improved by less than 5%
- Advanced breast cancer in premenopausal women is the leading cause of cancer death in women 20-59 years old

Kisqali was developed by the Novartis Institutes for BioMedical Research (NIBR) under a research collaboration with Astex Pharmaceuticals

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Novartis Oncology Pipeline

Novel Immuno-therapy (IO)	Solo or combo	TGFβ (NIS793) +/- PD1
		Adenosine R (NIR178) +/- PD1
		CD73 (NZV930) +/- PD1
		Het IL-15 (NIZ985) +/- PD1
		TLR7 ISAC (NJH395) +/- PD1
		TLR7 (LHC165) +/- PD1
		LAG3 (LAG525) +/- PD1
		TIM3 (MBG453) +/- PD1
		TIM3 (MBG453) + HMA +/- PD1
		STING (MIW815)[1] +/- PD1 or CTLA4
		CSF-1 (MCS110) +/- PD1
		CSF-1R (BLZ945) +/- PD1
		PD1 (PDR001)
	Solo	CD123 x CD3 (SQZ622)[2]
		GITR (GWN323)
CAR-T		CAR-T-CD19 (CTL019/119)
		CAR-T-BCMA (MCM998)
		CAR-T-EGFRvIII (LXF821)
		CAR-T-Mesothelin (NIU440)
		CAR-T CD22 (JJ0686)
		CAR-T CD123 (JEZ567)

Targeted therapy (TT)	pan-RAF (LXH254)
	ERK (LTT462)
	SHP2 (TNO155)
	P53/HDM2 (HDM201)
	BCL2 (VOB560)
	MCL1 (MIK665)[3]
	EED (MAK683)
	Porcupine (WNT974)
	SERD (LSZ102)
	BAFF (VAY736)
Radioligand Therapy (RLT)	SSTR (Lutathera®)
	PSMA (PSMA-617)[4]
	GRPR (NeoB)[5]
	Integrin (FF-10158)[6]

Novel combinations[8]	IO/IO	CD73 + Adenosine R (NIR178) +/- PD-1 in multiple solid tumors
		PDR001 + TGFβ Multiple Solid Tumors
	CAR-T/IO	CAR-T EGFRviii + PDR001 in Glioblastoma
		Kymriah® + Pembro in DLBCL
		Tafinlar® + Mekinist® + PDR001 in Melanoma
	TT/IO	MET (INC280) + PDR001 in Lung Cancer
		SHP2 (TNO155) + PDR001 in Lung Cancer
	RLT/IO	Lutathera® + PD1 in Neuroendocrine Tumors
		PSMA-617 + PD1 in mCRPC[7]
	TT/TT	cRAF (LXH254) + MEK (Mekinist®) in NSCLC, Melanoma
		cRAF (LXH254) + ERK (LTT462) in NSCLC, Melanoma
		cRAF (LXH254) + ribociclib in Melanoma
		SERD (LSZ102) + PI3K (BYL719) in Breast Cancer
		SERD (LSZ102) + CDK4/6 (Kisqali®) in Breast Cancer
		SHP2 (TNO155) + ribociclib in NSCLC, CRC
		MCL1 (MIK665) + venetoclax in AML/MDS
		MDM2 (HDM201) + TIM3 (MBG453) or venetoclax in AML

1. Collaboration / licensing with Aduro 2. Collaboration / licensing with Xencor 3. Collaboration / licensing with Servier 4. Licensed from ABX 5. Licensed from Erasmus University Medical Center and Demokritos National Center for Scientific Research 6. Licensed from FUJIFILM Toyama Chemical Co,. LTD 7. Collaboration with Peter MacCallum Cancer Centre 8. Selected trials

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