Q2 2016 results

Investor presentation | July 19, 2016
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Nor can there be any guarantee that Novartis will be able to realize any of the potential strategic benefits, synergies or opportunities as a result of the creation of the Pharmaceuticals business unit and Oncology business unit to form the Innovative Medicines Division, the strategic actions announced in January 2016, the creation and operation of NBS, or the transactions with GSK, Lilly and CSL. Neither can there be any guarantee that Novartis or any of the businesses involved in the transactions will achieve any particular financial results in the future. Neither can there be any guarantee that shareholders will achieve any particular level of shareholder returns. Nor can there be any guarantee that the Group, or any of its divisions, will be commercially successful in the future, or achieve any particular credit rating. In particular, management's expectations could be affected by, among other things: unexpected regulatory actions or delays or government regulation generally; the potential that the strategic benefits, synergies or opportunities expected from the creation of the Pharmaceuticals business unit and Oncology business unit to form the Innovative Medicines Division, the strategic actions announced in January 2016, the creation and operation of NBS, or the transactions with GSK, Lilly and CSL may not be realized or may take longer to realize than expected; the inherent uncertainties involved in predicting shareholder returns or credit ratings; the uncertainties inherent in research and development, including unexpected clinical trial results and additional analysis of existing clinical data; our ability to obtain or maintain proprietary intellectual property protection, including the ultimate extent of the impact on Novartis of the loss of patent protection and exclusivity on key products which commenced in prior years and continues this year; unexpected safety, quality or manufacturing issues; global trends toward health care cost containment, including ongoing pricing pressures, in particular from increased publicity on pharmaceuticals pricing; uncertainties regarding actual or potential legal proceedings, including, among others, actual or potential product liability litigation, litigation and investigations regarding sales and marketing practices, intellectual property disputes, and government investigations generally; general economic and industry conditions, including uncertainties regarding the effects of the persistently weak economic and financial environment in many countries; uncertainties regarding future global exchange rates, including the continued increases in value of the US dollar, our reporting currency, against a number of currencies; uncertainties regarding future demand for our products; uncertainties involved in the development of new healthcare products; uncertainties regarding potential significant breaches of data security or disruptions of our information technology systems; and other risks and factors referred to in Novartis AG's current Form 20-F on file with the US Securities and Exchange Commission. Novartis is providing the information in this presentation as of this date and does not undertake any obligation to update any forward-looking statements as a result of new information, future events or otherwise.
Agenda

1. Group review
   Joseph Jimenez, Chief Executive Officer

2. Financial review
   Harry Kirsch, Chief Financial Officer

3. Development
   Vas Narasimhan, Global Head Drug Development & CMO

4. Closing
   Joseph Jimenez, Chief Executive Officer

5. Q&A session
   Executive team
Solid Q2 despite Gleevec® LoE; innovation strengthens future growth prospects

Net sales flat (cc vs. PY)
With growth products mitigating Gleevec® LoE impact

Core operating income -4% (cc vs. PY)
Reflecting Gleevec® LoE and growth investment

Launches progressing
Strong Entresto® guidelines in US and EU; Cosentyx® strong launch continues

Innovation
LEE011 trial stopped early on positive efficacy; biosimilar rituximab filed in Europe

1. LoE: Loss of exclusivity  2. All growth shown vs. prior year (PY) in constant currencies (cc). All numbers refer to continuing operations (incl. the oncology assets acquired from GSK and the OTC JV formed in 2015) and do not include divested businesses. An explanation of continuing operations can be found on page 40 of the Condensed Financial Report
Our priorities for 2016

1. Deliver strong **Financial Results**
2. Strengthen **Innovation**
3. Improve **Alcon performance**
4. Capture **Cross-Divisional Synergies**
5. Build a **High-Performing Organization**
Solid sales performance despite Gleevec® LoE, Alcon growth plan progressing

**Innovative Medicines**

Sales -1%  
with Cosentyx®, Gilenya® off-setting Gleevec® US  
(+3% excl. Gleevec®)

**Sandoz**

Sales +3%  
driven by growth in all regions

**Alcon**

Sales -1%  
growth plan being executed

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1. All growth shown vs. PY in constant currencies (cc). All figures reflect the transfers of certain products between divisions, as announced on January 27, 2016. See page 42 of the Condensed Interim Financial Report for a full explanation.
2. In the US, Gleevec® lost exclusivity on February 1, 2016.
Entresto®: Strong endorsement of patient benefit

- Class I recommendation in US and EU guidelines
- JAMA Cardiology report¹:
  — 28,000 deaths could be prevented or postponed in US alone
  — Entresto® cost-effective vs. enalapril
- Significant investment increase in 2016:
  — FortiHFy: Largest ever heart failure clinical program
  — US field force: Expansion underway
  — Medical support

Entresto®: Acceleration in TRx trend

- **Q2 Sales**: USD 32m
- **US accelerating** adoption and new prescribers
- **HTA bodies in the EU** endorse Entresto® as cost-effective²
- **On track** for full-year sales of USD 200m

1. IMS data week ending 7/1/16
2. Most recently IQWiG (Germany) recommended reimbursement. G-BA confirmed IQWiG recommendation
Strong Cosentyx® launch boost to Q2 sales

- USD 260 million sales in Q2
- US field force expansion completed
- Long-term efficacy: 3-year data in PsO and 2-year data in AS and PsA\(^1,2\)

1. PsO: Psoriasis; AS: Ankylosing Spondylitis; PsA: Psoriatic arthritis  
Cosentyx®: Strong launch in AS and PsA; PsO progress continues

AS and PsA share of US weekly NBRx¹ (%; US Rheumatology only)

- **AS and PsA:**
  - Launched in US, JP², DE

- **PsO:**
  - Launched in US, JP, EU
  - Leading share in DE biologics³

1. Total NBRx data across Rheumatology specialty (Source: IMS NBRx Monthly June 2016 allocated for PSA and AS indications only based on anonymized patient data to date)
2. In JP only PsO and PsA are indicated. AS has not been submitted to date
3. Biologics segment defined as Humira®, Enbrel®, Simponi®, Stelara®, Cimzia®, Cosentyx®, Oluxia®, Remicade® (Source: IMS, office-based dermatologist only)

All trademarks are the property of their respective owners.
Innovative Medicines pipeline continues to deliver

**Oncology**

- **LEE011**  
  Ph III trial stopped early due to positive efficacy

- **Tafinlar® + Mekinist®**  
  63% ORR in BRAF V600E-mutant NSCLC

- **Afinitor®**  
  FDA and EU approval in GI/lung NET

**Pharmaceuticals**

- **Ultibro®**  
  FLAME data demonstrates superiority over Seretide®

- **AMG 334**  
  Significant benefit in chronic migraine (Ph II)

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1. Overall Response Rate in BRAF V600E-mutation positive non-small cell lung cancer  
2. Treatment of unresectable or metastatic, well-differentiated (Grade 1 or Grade 2) nonfunctional neuroendocrine tumors (NET) of gastrointestinal (GI) or lung origin in adults with progressive disease  
3. Seretide® is a registered trademark of GlaxoSmithKline
Sandoz delivering on biosimilars\footnote{Rituxan\textsuperscript{®} is a registered trademark of Roche. Enbrel\textsuperscript{®} is a registered trademark of Amgen.}

- **Etanercept** recommended by FDA advisory committee for approval

- **Rituximab** submission accepted by EMA and new data demonstrates bioequivalence to originator
Alcon: Turnaround progress giving confidence

Accelerating innovation and sales
- Sales growth in cataract consumables and contact lenses
- CE Mark in Europe for Dailies Total1® Multifocal and PanOptix® with UltraSert®
- Pivotal data on CyPass® MIGS device presented at ASCRS
- Increased M&S investment behind key products in both Surgical and Vision Care

Reinforcing strong customer relationships
- Redefined and launched new customer experience standards
- Created global organization focused on delivering customer excellence

Improving basic operations
- Upgraded order and inventory management, resulting in improved supply stability
- Further engaging and building confidence with associates
We are advancing our productivity agenda

- NBS cost under management continues to be flat vs. PY
- Procurement savings of ~USD 0.8bn YTD
- Selective offshoring to our five Global Service Centers continues
- Centralized **Technical Operations** and integrated **Drug Development** organizations operational as of July 1, 2016
Expected cost synergies USD 1bn per year from manufacturing and development by 2020

Impact on Operating Income
Illustrative

Capture Cross-Divisional Synergies

2016 2017 2018 2019 2020

≥ USD 1bn

Expected cost synergies ≥ USD 1bn per year by 2020

Expected one-time costs USD 1.4bn over 5 years
Focus on businesses fueled by innovation, supported by functional excellence

<table>
<thead>
<tr>
<th>Patient and customer focus</th>
<th>Innovative medicines</th>
<th>Generics &amp; biosimilars</th>
<th>Eye care devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oncology</td>
<td>Pharmaceuticals</td>
<td>Sandoz</td>
<td>Alcon</td>
</tr>
</tbody>
</table>

### Build a High-Performing Organization

<table>
<thead>
<tr>
<th>Build a High-Performing Organization</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Build a High-Performing Organization</td>
<td>Oncology</td>
<td>Research</td>
<td>Development</td>
<td>Manufacturing</td>
<td>Business Services</td>
</tr>
</tbody>
</table>

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1 Novartis Q2 2016 Results | July 19, 2016 | Novartis Investor Presentation
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5. Q&A session  
   Executive team
# Summary of Q2 2016 financial results

## Continuing operations<sup>1</sup>

<table>
<thead>
<tr>
<th></th>
<th>Q2 2016</th>
<th>Change vs. PY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% USD</td>
<td>% cc</td>
</tr>
<tr>
<td>Net Sales</td>
<td>12 470</td>
<td>-2</td>
</tr>
<tr>
<td>Core Operating Income</td>
<td>3 332</td>
<td>-7</td>
</tr>
<tr>
<td>Operating Income</td>
<td>2 093</td>
<td>-8</td>
</tr>
<tr>
<td>Net Income</td>
<td>1 806</td>
<td>-3</td>
</tr>
<tr>
<td>Core EPS (USD)</td>
<td>1.23</td>
<td>-3</td>
</tr>
<tr>
<td>EPS (USD)</td>
<td>0.76</td>
<td>-1</td>
</tr>
<tr>
<td>Free Cash Flow</td>
<td>2 526</td>
<td>22</td>
</tr>
</tbody>
</table>

1. An explanation of continuing operations can be found on page 40 of the Condensed Interim Financial Report

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18 | Novartis Q2 2016 Results | July 19, 2016 | Novartis Investor Presentation
Sales volume mostly offset by Gx impact

Continuing operations Q2 2016
(growth vs. PY in %)

Net sales

- Volume before Gx: 5
- Price\(^1\): -1
- Generics impact: -4
- CC growth: 0
- Currency: -2
- USD growth: -2

Core operating income

- Core operating income: 14
- Price\(^1\): -6
- Generics impact: -12
- CC growth: -4
- Currency: -3
- USD growth: -7

1. Includes the price impact of generic entries
Core margin decline mainly due to generic erosion and growth investments

<table>
<thead>
<tr>
<th></th>
<th>Net sales change vs. PY (in % cc)</th>
<th>Core operating income change vs. PY (in % cc)</th>
<th>Core ROS (%)</th>
<th>Core margin change vs. PY (% pts cc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovative Medicines</td>
<td>-1</td>
<td>-4</td>
<td>31.8</td>
<td>-1.0</td>
</tr>
<tr>
<td>Sandoz</td>
<td>3</td>
<td>4</td>
<td>20.8</td>
<td>0.2</td>
</tr>
<tr>
<td>Alcon</td>
<td>-1</td>
<td>-15</td>
<td>15.8</td>
<td>-2.6</td>
</tr>
<tr>
<td>Q2 continuing operations</td>
<td>0</td>
<td>-4</td>
<td>26.7</td>
<td>-1.1</td>
</tr>
</tbody>
</table>
# Innovative Medicines Division

## Key growth drivers

<table>
<thead>
<tr>
<th>Indication</th>
<th>Q2 2016 Net sales (USD m)</th>
<th>Q2 2016 Growth vs. PY (% cc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS</td>
<td>811</td>
<td>17%</td>
</tr>
<tr>
<td>CML</td>
<td>458</td>
<td>15%</td>
</tr>
<tr>
<td>Type 2 diabetes mellitus</td>
<td>306</td>
<td>12%</td>
</tr>
<tr>
<td>PsO, PsA, AS</td>
<td>260</td>
<td>nm</td>
</tr>
<tr>
<td>Severe allergic asthma, CSU/CIU</td>
<td>212</td>
<td>12%</td>
</tr>
<tr>
<td>aRCC</td>
<td>188</td>
<td>15%</td>
</tr>
<tr>
<td>COPD</td>
<td>176&lt;sup&gt;3&lt;/sup&gt;</td>
<td>17%</td>
</tr>
<tr>
<td>BRAF V600+ metastatic melanoma</td>
<td>172&lt;sup&gt;4&lt;/sup&gt;</td>
<td>31%</td>
</tr>
<tr>
<td>MF, PV</td>
<td>146</td>
<td>49%</td>
</tr>
<tr>
<td>Thrombocytopenia&lt;sup&gt;6&lt;/sup&gt;, SAA</td>
<td>158</td>
<td>36%</td>
</tr>
<tr>
<td>HFrEF</td>
<td>32</td>
<td>nm</td>
</tr>
</tbody>
</table>

1. Selected key products for growth of Innovative Medicines Division
2. In the US, Onbrez® Breezhaler® approved as Arcapta® Neohaler®; Seebri® Breezhaler® as Seebri® Neohaler® and Ultibro® Breezhaler® as Ultibron® Neohaler®
3. Net sales and growth of Onbrez®, Seebri® and Ultibro®
4. Net sales of Tafinlar® + Mekinist®
5. Approved as Promacta® in the US
6. cITP and thrombocytopenia associated with hepatitis C
Q2 currency impact -2% and -3%, FY outlook at -1% and -3%

Currency impact vs. PY
(in % pts)

<table>
<thead>
<tr>
<th></th>
<th>2015 Q1</th>
<th>2015 Q2</th>
<th>2015 Q3</th>
<th>2015 Q4</th>
<th>2016 Q1</th>
<th>2016 Q2</th>
<th>2016 Q3</th>
<th>2016 Q4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net sales</td>
<td>-10</td>
<td>-11</td>
<td>-12</td>
<td>-8</td>
<td>-4</td>
<td>-2</td>
<td>-1</td>
<td>-1</td>
</tr>
<tr>
<td>Core operating income</td>
<td>-13</td>
<td>-13</td>
<td>-17</td>
<td>-14</td>
<td>-6</td>
<td>-3</td>
<td>-2</td>
<td>-3</td>
</tr>
</tbody>
</table>

FY impact: -10%

FY impact: -15%

1. Assuming early July rates prevail for the remainder of the year
Net debt increased as expected due to dividend payment in March

(in USD bn)

1. Related to employee participation programs
Full year outlook
Barring unforeseen events

• Group net sales are expected to be broadly in line with the prior year (cc)

• Based on positive treatment guidelines on Entresto®, we will increase spending significantly in H2 2016 to maximize this growth opportunity

• As a result of this additional investment, and depending on Gleevec® erosion curve, core operating income is expected to be broadly in line or decline low single digit (cc)
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One Novartis Development organization; three units across Innovative Medicines and Sandoz

Novartis Drug Development

**Pharmaceuticals**
- Immunology
- Dermatology
- Cardio-Metabolic
- Respiratory
- Ophthalmology
- Neuroscience

**Oncology**
- Oncology
- Cell & Gene Therapies

**Biopharma**
- Biosimilars
AMG 334\(^1\) demonstrated positive efficacy and safety in chronic migraine prophylaxis

**Phase II Chronic Migraine Results\(^2\)**

Reduction of mean monthly migraine days

- Placebo: -4.2
- AMG 334 70 mg: -6.6\(^3\)

**AMG 334 (CGRP inhibitor)**

- Positive efficacy and safety results from Ph II study for chronic migraine (CM) prophylaxis
- Ph III episodic migraine results expected in H2 2016

**Chronic Migraine**

- 15 or more headache days a month of which at least 8 are migraine days
- CM global prevalence ranges from 1% to 5%\(^4\)

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1. In collaboration with Amgen; Novartis has AMG 334 rights outside of US, Canada and Japan  
2. Phase II chronic migraine study: patients with ~18 migraine days per month at baseline  
3. Statistically significant reduction for both doses  
4. The International Classification of Headache Disorders, 3\(^{rd}\) edition (beta version) Cephalalgia 2013; 33(9) 629–808
Ultibro® Breezhaler® superior to Seretide®¹ in reducing COPD exacerbations

FLAME² study
Ultibro® Breezhaler® vs. Seretide®

Ultibro® Breezhaler® demonstrated consistent superiority over Seretide®

- Significantly reduced rate of moderate or severe exacerbations (17%)
- Significantly prolonged time to first moderate or severe exacerbation (22%)
- Confirmed improvements in lung function and health-related quality of life
- Now published in NEJM³

Ultibro® Breezhaler® provides important treatment option for frequently exacerbating COPD patients

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¹ Seretide® is a registered trademark of GlaxoSmithKline
³ NEJM: The New England Journal of Medicine
Entresto®: Driving further clinical trial data and insights generation

FortiHFy Clinical Program
>40 ongoing / planned trials, with over 30,000 investigators to expand clinical evidence in HF patients incl. in HFrEF “non-PARADIGM” patients

Recent JAMA Cardiology publications
>28,000 preventable or postponable deaths in the US if all eligible patients would be treated with Entresto®
Entresto® shown to be cost effective compared to ACE inhibitor and consistent with other high-value CV interventions

Post-Acute Myocardial Infarction
PARADISE-MI trial on track to start in 2016

Generate additional data across different patient populations
Drive mechanistic insights
Assess impact on symptoms and QoL (in HFrEF)
Establish RWE\(^1\) and Disease Management

1. RWE: Real World Evidence  

| Novartis Q2 2016 Results | July 19, 2016 | Novartis Investor Presentation |
Entresto® given strong recommendations in heart failure guidelines

**Associations**

- United States
- American Heart Association
- HFSA
- European Union
- European Society of Cardiology

**Entresto®**

- **Class I rating**
  - **Class I rating**

**Key implications**

- **Places Entresto® as alternative standard therapy to ACE/ARB (ACE or ARB or ARNI)**

- **Entresto® should replace ACE in patients on optimal therapy (ACE, BB, MRI) who are still symptomatic**

- **Symptomatic patients on ACE/ARB should be switched to Entresto®**

- **For patients meeting the PARADIGM-HF criteria**
Data show that Cosentyx® can prevent disease progression in Ankylosing Spondylitis (AS)

Strong data support initiation of new superiority head-to-head trial vs. Humira®

AS: mSASSS progression at week 104²

- 80% of AS patients treated with Cosentyx® had no radiographic progression in the spine for up to 2 years
- Indirect comparison suggests Cosentyx® may improve signs and symptoms vs. Humira® in AS
- New head-to-head superiority trial vs. Humira® planned in AS (SURPASS)

Cosentyx® shows strong longer term data in Psoriatic Arthritis (PsA)

Robust data further support planned head-to-head superiority trial vs. Humira®

PsA: mTSS progression at week 104

- No radiographic progression in 84% of PsA patients treated with Cosentyx® for up to 2 years
- Sustained relief from signs and symptoms through 2 years
- Indirect comparison suggests Cosentyx® may improve signs and symptoms vs. Humira® for PsA
- Supports planned head-to-head superiority trial vs. Humira®

1. Humira® is a registered trademark of AbbVie
Ilaris®: 3 FDA breakthrough designations and priority reviews for Periodic Fever Syndromes

Ilaris® CLUSTER trial\(^1\)
Responder rate\(^2\) at Week 16

<table>
<thead>
<tr>
<th>Condition</th>
<th>ACZ885 150mg</th>
<th>Placebo</th>
</tr>
</thead>
<tbody>
<tr>
<td>crFMF</td>
<td>61.3%</td>
<td>6.3%</td>
</tr>
<tr>
<td>HIDS</td>
<td>35.1%</td>
<td>5.7%</td>
</tr>
<tr>
<td>TRAPS</td>
<td>45.5%</td>
<td>8.3%</td>
</tr>
</tbody>
</table>

**Trial results**
- Ilaris® offered significant improvement vs. placebo
- Ilaris® was effective and well tolerated

**Regulatory update**
- Submissions completed in US, EU, JP
- FDA breakthrough therapy designations received
- FDA priority reviews granted for all three indications

**Latest news**
CHMP recommended license extension of Ilaris® to treat Adult-Onset Still’s Disease (AOSD)

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1. De Benedetti et al. EULAR 2016 poster presentation  
2. Responder definition: Resolution of index flare at Day 15 and no new flare from the resolution of the index flare until Week 16
LEE011 on track for filing later this year with additional Phase III trials progressing

MONALEESA-2: Ph III study in 1st-line HR+/HER2- advanced breast cancer

• Primary efficacy endpoint met at pre-planned interim analysis; trial stopped early
• Clinically meaningful improvement in PFS of ribociclib + letrozole vs. letrozole
• Novartis initiating discussions with regulatory authorities worldwide

Additional LEE011 Ph III trials in HR+/HER2- advanced breast cancer

MONALEESA-3 (post-menopausal)

• 1\textsuperscript{st} / 2\textsuperscript{nd} line post AI in combination with fulvestrant
• Fully enrolled; final data expected H2 2017; potential filing early 2018

MONALEESA-7 (pre-menopausal)

• 1\textsuperscript{st} line in combination with tamoxifen/NSAI & goserelin
• Fully enrolled; final data expected H1 2018 and potential filing H2 2018
Long-term survival in melanoma Phase III trial with Tafinlar® + Mekinist®

COMBI-d: Overall Survival (OS)¹
% probability of event-free survival

![Graph showing overall survival](image)

At 3-year follow-up, 44% of patients alive after receiving Tafinlar® + Mekinist®

Presented at ASCO; only Ph III study in melanoma to report new OS landmark

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¹. Intent-to-treat population; Tafinlar® + placebo includes 26 patients who crossed over to combination arm
Positive data for Tafinlar® + Mekinist® for NSCLC, regulatory filings planned for Q3 2016

Results from Ph II, non-comparative trial in BRAF V600+ NSCLC\textsuperscript{1,2}

<table>
<thead>
<tr>
<th>Tafinlar\textsuperscript{®} Monotherapy (n=78)</th>
<th>Tafinlar\textsuperscript{®} + Mekinist\textsuperscript{®} (n=57)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ORR\textsuperscript{3} %</strong> (95% CI)</td>
<td><strong>Median PFS\textsuperscript{4} Months</strong> (95% CI)</td>
</tr>
<tr>
<td>33% (23% to 45%)</td>
<td>63% (49% to 76%)</td>
</tr>
<tr>
<td></td>
<td>9.7 months (6.9 to 19.6 months)</td>
</tr>
<tr>
<td></td>
<td>5.5 months (3.4 to 7.3 months)</td>
</tr>
</tbody>
</table>

Safety profile similar to previous experience in melanoma
- No new safety risks identified

Low treatment discontinuation due to AEs
- 8 (14\%) 2L+ subjects

Planned submissions in Q3 2016
- US, EU & Japan

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3. Overall Response Rate (Complete Response + Partial Response)
4. Progression Free Survival

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Jakavi®: Data confirms significant clinical benefit for patients with MF and PV

Myelofibrosis (COMFORT-I)
5-year OS follow-up

- Significant OS advantage of Jakavi® vs. placebo at 5-year follow-up
- Complements COMFORT-II survival data

Polycythemia Vera (RESPONSE-2)
Hematocrit control vs. BAT¹

- Superior hematocrit control vs. BAT¹ in inadequately controlled (IC) patients without enlarged spleen
- Consistent with RESPONSE trial in IC patients with enlarged spleen

¹. Best Available Therapy
## Progressing development of 11 potential blockbusters in Innovative Medicines

<table>
<thead>
<tr>
<th>Molecule</th>
<th>Indication</th>
<th>MoA</th>
<th>Expected Pivotal Trial Readout</th>
<th>Potential blockbuster?</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEE011 (ribociclib)</td>
<td>HR+ HER2- advanced breast cancer</td>
<td>CDK4/6 inhibitor</td>
<td>✓</td>
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<tr>
<td>OAP030 (Fovista®)¹</td>
<td>Neovascular AMD</td>
<td>Aptamer anti-PDGF</td>
<td>Q4 2016</td>
<td>✓</td>
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<tr>
<td>AMG 334²</td>
<td>Prophylaxis of migraine</td>
<td>CGRP receptor antagonist</td>
<td>H2 2016³</td>
<td>✓</td>
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<td>RLX030 (serelaxin)</td>
<td>Acute heart failure</td>
<td>Relaxin receptor agonist</td>
<td>H1 2017</td>
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<td>RTH258 (brolucizumab)</td>
<td>Neovascular AMD</td>
<td>Anti-VEGF (scFv)</td>
<td>H1 2017</td>
<td>✓</td>
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<tr>
<td>ACZ885 (Ilaris®)</td>
<td>CV risk reduction</td>
<td>Anti-IL1β</td>
<td>2017</td>
<td>✓</td>
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<tr>
<td>AIN457 (Cosentyx®)²</td>
<td>Non-radiographic axial SpA</td>
<td>Anti-IL17A</td>
<td>2018</td>
<td>✓</td>
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<tr>
<td>QVM149 (indacaterol, glycopyrronium, mometasone)</td>
<td>Asthma</td>
<td>LABA + LAMA + ICS</td>
<td>2018</td>
<td>✓</td>
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<td>LCZ696 (Entresto®³)</td>
<td>Heart failure - preserved EF (HFpEF)</td>
<td>ARNI</td>
<td>2019</td>
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<td>QAW039 (fevipiprant)</td>
<td>Asthma</td>
<td>CRTh2 antagonist</td>
<td>2019</td>
<td>✓</td>
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<td>OMB157 (ofatumumab)</td>
<td>Relapsing multiple sclerosis</td>
<td>Anti-CD20</td>
<td>2019</td>
<td>✓</td>
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</tbody>
</table>

1. In collaboration with OphthoTech and Genentech; Novartis has OAP030 rights outside of the US
2. In collaboration with Amgen; Novartis has AMG 334 rights outside of US, Canada and Japan
3. Ph III trial for chronic migraine completed, Ph III for episodic migraine ongoing

---

1. In collaboration with OphthoTech and Genentech; Novartis has OAP030 rights outside of the US
2. In collaboration with Amgen; Novartis has AMG 334 rights outside of US, Canada and Japan
3. Ph III trial for chronic migraine completed, Ph III for episodic migraine ongoing
Biosimilars: Regulatory and data milestones

<table>
<thead>
<tr>
<th>Rituximab</th>
<th>Pegfilgrastim</th>
<th>Etanercept</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Submitted in EU</td>
<td></td>
<td></td>
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<tr>
<td>• Demonstrated similarity with MabThera®: PK bioequivalence, similar PD, safety, efficacy and immunogenicity</td>
<td></td>
<td></td>
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<tr>
<td>• FDA complete response letter received</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Demonstrated similarity with Enbrel®: PK bioequivalence, no clinically meaningful differences in safety, tolerability and immunogenicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Approval unanimously recommended by FDA advisory committee for all originator indications</td>
<td></td>
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1. MabThera® is a registered trademark of Roche in Europe. The treatment is marketed as Rituxan® in the US by Genentech
2. Enbrel® is a registered trademark of Amgen in the US and Pfizer in Europe
## Biosimilars on track for multiple potential approvals

<table>
<thead>
<tr>
<th>Molecule</th>
<th>Indication</th>
<th>Originator</th>
<th>Agency</th>
<th>Filing</th>
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<td>Rheumatoid Arthritis</td>
<td>Enbrel</td>
<td>FDA</td>
<td>2015</td>
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<td>Etanercept</td>
<td>Rheumatoid Arthritis</td>
<td>Enbrel</td>
<td>EMA</td>
<td>2015</td>
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<tr>
<td>Pegfilgrastim</td>
<td>Neutropenia</td>
<td>Neulasta</td>
<td>FDA</td>
<td>2015</td>
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<tr>
<td>Pegfilgrastim</td>
<td>Neutropenia</td>
<td>Neulasta</td>
<td>EMA</td>
<td>2015</td>
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<td>Epoetin subcutaneous</td>
<td>Anemia</td>
<td>Procrit</td>
<td>EMA</td>
<td>2015</td>
</tr>
<tr>
<td>Epoetin subcutaneous</td>
<td>Anemia</td>
<td>Procrit</td>
<td>EMA</td>
<td>2015 (approved)</td>
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<tr>
<td>Rituximab</td>
<td>Non-Hodgkin’s Lymphoma</td>
<td>Rituxan</td>
<td>EMA</td>
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<tr>
<td>Epoetin</td>
<td>Anemia</td>
<td>Procrit</td>
<td>FDA</td>
<td>2016</td>
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<tr>
<td>Adalimumab</td>
<td>Rheumatoid Arthritis</td>
<td>Humira</td>
<td>FDA</td>
<td>2016</td>
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<tr>
<td>Adalimumab</td>
<td>Rheumatoid Arthritis</td>
<td>Humira</td>
<td>EMA</td>
<td>2017</td>
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<tr>
<td>Rituximab</td>
<td>Non-Hodgkin’s Lymphoma</td>
<td>Rituxan</td>
<td>FDA</td>
<td>2017</td>
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<td>Infliximab</td>
<td>Inflammatory Bowel Disease</td>
<td>Remicade</td>
<td>EMA</td>
<td>2017</td>
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1. Main indication only  
2. All trademarks are the property of the respective originator companies
Agenda

1. Group review  
   Joseph Jimenez, Chief Executive Officer

2. Financial review  
   Harry Kirsch, Chief Financial Officer

3. Development  
   Vas Narasimhan, Global Head Drug Development & CMO

4. Closing  
   Joseph Jimenez, Chief Executive Officer

5. Q&A session  
   Executive team
Solid Q2, investing for future growth as we manage the Gleevec® patent expiration

- Investing behind our growth opportunities
- Launches progressing well
- Pipeline strong
Agenda

1. Group review  Joseph Jimenez, Chief Executive Officer
2. Financial review  Harry Kirsch, Chief Financial Officer
3. Development  Vas Narasimhan, Global Head Drug Development & CMO
4. Closing  Joseph Jimenez, Chief Executive Officer
5. Q&A session  Executive team
Q&A
**Achieved and expected highlights from regulatory news flow**

<table>
<thead>
<tr>
<th>H1 2016</th>
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<tbody>
<tr>
<td>Cosentyx®</td>
<td>FDA action in ankylosing spondylitis</td>
<td>✓</td>
</tr>
<tr>
<td>Cosentyx®</td>
<td>FDA action in psoriatic arthritis</td>
<td>✓</td>
</tr>
<tr>
<td>Ilaris®</td>
<td>Regulatory filings in US, EU and JP for periodic fever syndromes</td>
<td>✓</td>
</tr>
<tr>
<td>Afinitor®</td>
<td>FDA and EU action for advanced non functional NET (GI/lung origin)</td>
<td>✓</td>
</tr>
<tr>
<td>PKC412</td>
<td>Regulatory filings in US and EU for both ASM and AML</td>
<td></td>
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<tr>
<td>Tafinlar® + Mekinist®</td>
<td>PMDA action in BRAF V600+ metastatic melanoma</td>
<td>✓</td>
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</table>

<table>
<thead>
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<th>H2 2016</th>
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<tbody>
<tr>
<td>BYM338</td>
<td>Regulatory filings in EU and US for sporadic inclusion body myositis</td>
<td>✗</td>
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<tr>
<td>Tafinlar® + Mekinist®</td>
<td>Regulatory filings in US and EU for BRAF V600+ NSCLC</td>
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<tr>
<td>Votrient®</td>
<td>Regulatory filings in US and EU for adjuvant RCC</td>
<td></td>
</tr>
<tr>
<td>Afinitor®</td>
<td>PMDA action in advanced non functional NET</td>
<td></td>
</tr>
<tr>
<td>LEE011 (+ letrozole)</td>
<td>Submission² in US and EU 1st line HR+ HER2(−) mBC</td>
<td></td>
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</tbody>
</table>

1. US regulatory submission was initiated (rolling submission). EU regulatory submission in expected in H2
2. Trial stopped early as it met the primary efficacy endpoint at the interim analysis. US and EU submissions planned for Q3
## Planned filings\(^\text{a}\) 2016 to ≥ 2020

<table>
<thead>
<tr>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>≥ 2020</th>
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</thead>
<tbody>
<tr>
<td>LEE011 + ltz HR+, HER2 (postmenopausal adv. Bc) <strong>1</strong> line</td>
<td>Tafinlar(^{\text{b}}) + Mekinist(^{\text{b}}) BRAF V600+ NSCLC(^{\text{c}})</td>
<td>CTL019</td>
<td>INC280 NSCLC(^{\text{d}})</td>
<td>BAF312 CML(^{\text{e}})</td>
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<tr>
<td>PKC412 AML(^{\text{a}})</td>
<td>Tasigna(^{\text{d}}) CML(^{\text{a}}) treatment free remission</td>
<td>OAP030d IIA/IIib</td>
<td>LCI699 Cushings’s disease</td>
<td>BYL719 + fulv HR+, HER2 (postmenopausal Adv. Bc) <strong>2</strong> line</td>
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<tr>
<td>Afinitor(^{\text{d}})/Votubia(^{\text{d}}) TSC(^{\text{b}}) seizures</td>
<td>Votrient(^{\text{e}}) Renal cell carcinoma (adjuvant)</td>
<td>RLX030 Acute heart failure</td>
<td>RTH258 IIA/IIib</td>
<td>QAO039 Asthma</td>
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<tr>
<td>Arzerra(^{\text{f}}) CLL(^{\text{g}})(relapsed)</td>
<td>Signifor(^{\text{b}}) LAR(^{\text{h}}) Cushings’s disease</td>
<td>ACZ285 Scl. prev. Cv events(^{\text{i}})</td>
<td>Entresto(^{\text{g}}) Heart failure (PEF)(^{\text{j}})</td>
<td>Entresto(^{\text{g}}) Heart failure (PEF)(^{\text{j}})</td>
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<tr>
<td>Ilaris(^{\text{b}}) Periodic fever syndromes</td>
<td>Adalimumab (US) GP2017</td>
<td>CTL019 DLBCL(^{\text{b}})</td>
<td>Lucentis(^{\text{a}}) + Mekinist(^{\text{b}}) BRAF V600+ Melanoma (adjuvant)</td>
<td>Lucentis(^{\text{a}}) ROP(^{\text{b}})</td>
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<tr>
<td>Lucentis(^{\text{b}}) CNP(^{\text{b}})</td>
<td>Epoetin-alfa (US) HX579</td>
<td>FTY720 Pediatric MS(^{\text{a}})</td>
<td>QEF149 Asthma</td>
<td>QMV149 Asthma</td>
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<td>PKC412 AML(^{\text{a}})</td>
<td>Rituximab (EU)(^{\text{b}}) GP2013</td>
<td>Tafinlar(^{\text{b}}) + Mekinist(^{\text{b}}) BRAF V600+ Melanoma (adjuvant)</td>
<td>LEE011+ tmx + gsn or NSAI + gsn/or NSAI + gsn</td>
<td>CAY106 Alzheimer’s disease</td>
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<td></td>
<td></td>
<td></td>
<td>LEED01+ tu/ » + gsn or NSAI + gsn or NSAI + gsn/or NSAI + gsn</td>
<td>CAD106 Alzheimer’s disease</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>VAY736 Primary Sjogren’s syndrome</td>
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</tr>
</tbody>
</table>

### Combination abbreviations:
- ftuv: fulvestrant
- ltz: latanoprost
- tmx: tamoxifen
gsn: goserelin
- NSAI: Non-steroidal aromatase inhibitor

### New molecule
- New indication
- New formulation
- Biosimilars

### 1. Breast cancer
2. Acute myeloid leukemia
3. Tuberous sclerosis complex
4. Chronic lymphocytic leukemia
5. Choroidal neovascularization (CNV) secondary to conditions other than macular degeneration and pathologic myopia
6. Aggressive systemic mastocytosis
7. Non-small cell lung cancer
8. Chronic myeloid leukemia
9. Long-acting release
10. Neovascular age-related macular degeneration
11. Secondary prevention of cardiovascular events
12. Diffuse large B-cell lymphoma
13. Multiple sclerosis
15. Non-radiographic axial spondyloarthritis
16. Secondary progressive multiple sclerosis
17. Preserved ejection fraction
18. Graft-Versus-Host Disease
19. Retinopathy of prematurity
20. Relapsing multiple sclerosis
21. Non-alcoholic steatohepatitis
22. Chronic spontaneous urticaria / Inducible urticaria
23. Diabetic macular edema
24. MAC 334 included in this view. MAC 334 is part of the global collaboration with Amgen to commercialize and develop neuroscience treatments.
25. Submitted in EU
26. US commercialization rights to Novartis under a Licensing and Commercialization Agreement.
## Pipeline of key projects in confirmatory development

<table>
<thead>
<tr>
<th>Post-PoC</th>
<th>Phase III / Pivotal</th>
<th>In Registration</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABL001 CML&lt;sup&gt;®&lt;/sup&gt; (CDK4/6 inhibitor)</td>
<td>AMG 334&lt;sup&gt;®&lt;/sup&gt; (Migraine)</td>
<td>Afinitor&lt;sup&gt;®&lt;/sup&gt;/Votubia&lt;sup&gt;®&lt;/sup&gt; (SCLC, lung cancer)</td>
</tr>
<tr>
<td>ASB183 Solid and hematologic tumors</td>
<td>BAF312</td>
<td>Afinitor&lt;sup&gt;®&lt;/sup&gt;/Votubia&lt;sup&gt;®&lt;/sup&gt; (SCLC, lung cancer)</td>
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<td>BGJ398</td>
<td>BYL719 + fulv</td>
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<td>BKM120</td>
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<td>CAD106</td>
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<td>Afinitor&lt;sup&gt;®&lt;/sup&gt;/Votubia&lt;sup&gt;®&lt;/sup&gt; (SCLC, lung cancer)</td>
</tr>
</tbody>
</table>

### Combination abbreviations:
- fulv: fulvestrant
- Itz: letrozole
- Gsn: goserelin
- Tz: tamoxifen
- Ps: poserelin
- NsaI: non-steroidal aromatase inhibitor

### In-Registeration Projects:
- Afinitor<sup>®</sup>/Votubia<sup>®</sup> (SCLC, lung cancer)
- Arzerra<sup>®</sup> (CDK4/6 inhibitor) (extended treatment)
- Ilaris<sup>®</sup> (periodic fever syndromes)
- Lucentis<sup>®</sup> (SCLC, lung cancer)
- Votrient<sup>®</sup> (renal cell carcinoma) (adjuvant)
- Tasigna<sup>®</sup> (CML treatment-free remission)
- Pegfylgrastim (EU/US) LA-EP2006
- Rituximab (EU/US) GP2013
- Adalimumab (US/EU) GP2017
- Epoetin-alfa (US) HX575
- Infliximab (EU) GP1111
- Rituximab (US) GP2013

### New Molecules:
- New molecule
- New indication
- New formulation
- Biosimilars
This presentation contains several important words or phrases that we define as below:

**AML**: Acute myeloid leukemia
**Approval**: In Pharmaceuticals and Alcon in US and EU; each indication and regulator combination counts as approval; excludes label updates, CHMP opinions alone and minor approvals
**aRCC**: advanced renal cell cancer
**ARNI**: Angiotensin receptor neprilysin inhibitor
**AS**: Ankylosing Spondylitis
**ASCRS**: American Society of Cataract and Refractive Surgery
**ASM**: Aggressive systemic mastocytosis
**Base business**: Continuing Oncology assets unaffected by the GSK transaction
**BAT**: Best available therapy
**cc**: constant currencies
**CGRP**: Calcitonin gene-related peptide
**cITP**: Chronic immune thrombocytopenia
**CM**: Chronic migraine
**CML**: Chronic myeloid leukemia
**COPD**: Chronic Obstructive Pulmonary Disease
**crFMF**: Colchicine resistant familial Mediterranean fever
**CSU / CIU**: Chronic spontaneous urticaria / Chronic idiopathic urticaria
**GI**: Gastrointestinal
**Growth Products**: Products launched in a key markets (EU, US, Japan) in 2011 or later, or products with exclusivity in key markets until at least 2020 (except Sandoz, which includes only products launched in the last 24 months). They include the acquisition effect of the GSK oncology assets
**HF**: Heart failure
**HF/eF**: Heart failure with reduced ejection fraction
**HIDS**: Hyperimmunoglobulin D Syndrome
**HR+HER2- mBC**: Hormone Receptor positive / Human Epidermal growth factor receptor 2 negative metastatic breast cancer
**HSCT**: Hematopoietic stem cell transplantation
**JAMA**: The Journal of the American Medical Association
**LoE**: Loss of exclusivity
**MF**: Myelofibrosis
**MI**: Myocardial infarction
**MiGIS**: Minimally-invasive glaucoma surgery
**MS**: Multiple sclerosis
**mSASSS**: modified stoke ankylosing spondylitis spine score
**mTSS**: Modified total sharp score
**NET**: Neuroendocrine tumor
**New assets**: Assets acquired in the GSK transaction which closed on March 2, 2015
**NSAI**: Nonsteroidal aromatase inhibitor
**NSCLC**: Non-small cell lung cancer
**ORR**: Overall response rate
**OS**: Overall survival
**PA**: Prior authorization
**PASI 90**: 90% reduction in Psoriasis Area Severity Index from baseline
**PFS**: Progression free survival
**PsA**: Psoriatic arthritis
**PsO**: Psoriasis
**PV**: Polycythemia vera
**PY**: Prior year
**RCC**: Renal cell cancer
**SAA**: Severe aplastic anemia
**scFv**: Single chain variable fragment
**SR GvHD**: Steroid resistant graft vs host disease
**TRAPS**: Tumor necrosis factor receptor associated periodic syndrome

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