Novartis Pharmaceuticals: Driving Growth

Paul Hudson, CEO Novartis Pharmaceuticals
January 8, 2018 | J.P. Morgan Healthcare Conference
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Agenda

1. Novartis Pharmaceuticals: Driving growth
2. Entresto® and Cosentyx®
3. New Launches
Novartis Group: Focused businesses fueled by innovation and functional excellence

Innovative Medicines

Oncology business unit

Pharmaceuticals business unit

Corporate functions

Business services

Manufacturing

R&D

Sandoz

Alcon

J.P. Morgan Healthcare Conference | January 8, 2018 | Novartis Investor Presentation
Novartis Pharmaceuticals: A key growth driver for the Group

<table>
<thead>
<tr>
<th>Pharmaceuticals BU</th>
<th>USD billion</th>
<th>Q3 2017</th>
<th>% change USD</th>
<th>% change cc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Sales</td>
<td>5.2</td>
<td>5</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

31,000 associates work across 5 core therapeutic areas

Growth rates in constant currencies (cc) vs. prior year (PY). Constant currencies, core results and free cash flow are non-IFRS measures. An explanation of these measures can be found on page 44 of the Q3 Condensed Interim Financial Report.
# Five core therapeutic areas with strong momentum and therapeutic depth

## Key assets

<table>
<thead>
<tr>
<th>Therapeutic Area</th>
<th>Net Sales 9 months to Sept 30, 2017 (USD m) and Growth vs. PY (in cc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immunology, Dermatology (I&amp;D)</td>
<td>1,456 (+98%)</td>
</tr>
<tr>
<td>Cardio-Metabolic (CM)</td>
<td>322 (+215%)</td>
</tr>
<tr>
<td>Ophthalmology</td>
<td>1,403 (+4%)</td>
</tr>
<tr>
<td>Neuroscience</td>
<td>2,360 (+3%)</td>
</tr>
<tr>
<td>Respiratory</td>
<td>673 (+12%)</td>
</tr>
</tbody>
</table>

## Late stage pipeline assets

<table>
<thead>
<tr>
<th>Immunology</th>
<th>Cardio-Metabolic</th>
<th>Ophthalmology</th>
<th>Neuroscience</th>
<th>Respiratory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cosentyx® (NrAxSpA)</td>
<td>Entresto® (pEF)</td>
<td>RTH258 (brolucizumab)</td>
<td>AMG 334 (erenumab)</td>
<td>QAW039 (fevipiprant)</td>
</tr>
<tr>
<td>ACZ885 (canakinumab)</td>
<td></td>
<td></td>
<td>BAF312 (siponimod)</td>
<td>QVM149</td>
</tr>
</tbody>
</table>

1. Net sales reflect Xolair® sales for all indications (e.g. including Xolair® SAA and Xolair® CSU, which is managed by the Immunology and Dermatology franchise).
We are strengthening our portfolio through targeted business development

Expanding current TA with new MOAs
- ZPL389
- UNR844 (EV06)
- ECF843 (rh-Lubricin)\(^1\)
- APO(a)-L\(_{RX}\) / APOCIII-L\(_{Rx}\)\(^2\)

Expanding into new Therapeutic Areas
- Emricasan\(^3\)
- Cenicriviroc collaboration

Expanding geographic scope
- AMG 334 US co-commercialization\(^4\)

Note: All trademarks are the property of their respective owners. 1. Option exercised April 2017 for exclusive ex-EU rights 2. Option to in-license 3. Option exercised May 2017 4. Novartis and Amgen to co-commercialize AMG 334 (erenumab) in the US; Novartis to gain exclusive rights in Canada. Novartis retains commercial rights in rest of world; Amgen retains commercial rights in Japan.
Driving operational excellence through data and advanced analytics

Commercial data – a strategic asset

• Advanced analytics and data science leveraged to get the real insights
• Adaptive and evidence-based commercial model, with continuous learning
• Connected framework for how we go to customers
Pharmaceuticals: Our priorities

1. Ensure Entresto® and Cosentyx® success
2. Prepare for data read-outs and new launches
3. Excellence in Execution
4. Culture
Agenda

1. Novartis Pharmaceuticals: Driving growth

2. Entresto® and Cosentyx®

3. New Launches
**Cosentyx®: Strong growth momentum across indications and geographies**

Quarterly sales evolution
USD million

- **Worldwide Q3 sales of USD 556m**
- **Strong growth driven by US and Europe, across all indications**
- **Established US NBRx leadership in PsA / AS, leading anti-IL17 in PsO¹**

1. Source: IMS weekly NBRx data (restated as of week ending August 11, 2017 to include Cosentyx® free drug access program), week ending September 29, 2017

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**Quarterly Sales Evolution (USD million)**

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>176</td>
<td>410</td>
</tr>
<tr>
<td>Q2</td>
<td>260</td>
<td>490</td>
</tr>
<tr>
<td>Q3</td>
<td>301</td>
<td>556</td>
</tr>
<tr>
<td>Q4</td>
<td>391</td>
<td></td>
</tr>
</tbody>
</table>

¹. Source: IMS weekly NBRx data (restated as of week ending August 11, 2017 to include Cosentyx® free drug access program), week ending September 29, 2017
Cosentyx®: Strong differentiation based on unique biology

Inhibition of IL-17A, a key inflammatory cytokine, is fundamental

Psoriasis1-9

• Superiority to anti-TNF (Enbrel®) and Stelara®
• Sustained control of signs and symptoms (5-year landmark data)
• Strong data in joints (in psoriatic arthritis, ~ 1/3 of psoriasis population) and hard-to-treat manifestations
• Potential for disease modification

Spondyloarthritis (PsA and AS)10-19

• Sustained control of signs and symptoms
• High level of enthesitis resolution
• No radiographic progression in psoriatic arthritis and ankylosing spondylitis
• Further building the evidence with ongoing studies, incl. nrAxSpA

Fully human molecule with very low immunogenicity20,21, very low injection site reactions1
Entresto®: Progressing steadily, fueled by improved access and field force expansion

Quarterly sales evolution
USD million

- Worldwide Q3 sales of USD 128m
- US benefitting from improved access\(^1\) and expanded field force
- Continued progress on access ex-US with Entresto® launched in >45 countries
- HF-pEF\(^2\) expansion studies on track for filing in 2019

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1. No Prior Authorization: 60% Medicare and 48% of Commercial segment
2. HF-pEF- heart failure with preserved ejection fraction
Agenda

1. Pharmaceuticals: Driving growth
2. Entresto® and Cosentyx®
3. New Launches
## Full pipeline of late stage assets: Key expected launches in Pharmaceuticals

<table>
<thead>
<tr>
<th>2018(^1)</th>
<th>2019(^1)</th>
<th>2020(^1)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AMG 334</strong> Migraine</td>
<td><strong>ACZ885</strong> CV risk red.</td>
<td><strong>OMB157</strong> Relapsing MS</td>
</tr>
<tr>
<td><strong>BAF312</strong> MS</td>
<td><strong>QVM149</strong> Asthma</td>
<td><strong>Entresto®</strong> HFpEF</td>
</tr>
<tr>
<td><strong>RTH258</strong> Neov. AMD</td>
<td></td>
<td><strong>Cosentyx®</strong> nrAxSpA</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>QAW039</strong> Asthma</td>
</tr>
</tbody>
</table>

1. Exact launches and timing depends on filing date, HAs decisions and timelines.
AMG 334 (erenumab): Potentially life-changing medication for a debilitating disease

Unique approach
- First and only mAb to target and block the CGRP-receptor
- Only fully human anti-CGRP mAb

Sustained and consistent prevention
- Chronic migraine patients on average gained one additional migraine-free week each month\(^1\)
- At 1 year\(^2\), 2/3 of episodic migraine patients had at least a 50% reduction in their migraine days with 1 out of 4 being completely migraine free

Unique & robust data package, even in the difficult to treat patients
- >2,600 patients; 5 year on-going extensions
- Strong efficacy in prior treatment failures, medication overuse patients

Placebo-like safety and tolerability
- Only anti-CGRP mAb to demonstrate it did not aggravate myocardial ischemia in a dedicated clinical study\(^3\)
- Very low incidence of injection site reactions in AMG 334 and placebo groups

\(^1\) Tepper S, Lancet Neurology 16(6), June 2017, 425–434
\(^2\) Ashina M et al. Neurology 89 (12), 1237-1243, 2017
\(^3\) Depre C et al. Presented at IHC 2017, Vancouver Canada [PO-01-198]
BAF312: Efficacy in SPMS creates opportunity to address an unmet need in more advanced patients

Diagnosed patient pool (US+EU5) | 90K | 560K | 120K | 120K | 102K

ACZ885: Strong value proposition a pre-requisite for a biologic treatment in a post-MI/CV risk reduction setting

Targeting narrow, well defined population
- ACZ885 population is well defined as post-MI and elevated inflammation (hsCRP≥2 mg/L)
- ACZ885 responder population is targeted to the patients who benefit the most (1 injection and who achieve hsCRP < 2mg/L in 3 months)

Straightforward patient selection
- hsCRP test is low cost and easy to perform; 1st test to identify eligible patients and 2nd test to identify responders

Very significant magnitude of benefit in responders¹
- While CANTOS met its primary endpoint in reducing risk of MACE by 15% in the overall study population², the benefits were markedly greater in the responder population:
  - 25% RRR in MACE (CV death, MI, stroke)
  - 31% RRR in CV death alone

¹. Ridker et al, Lancet 2017 [in press]: http://dx.doi.org/10.1016/S0140-6736(17)32814-3; Pooled dose analysis. 150mg arm also showed 25% RRR on MACE. ². Ridker et al, NEJM 2017, DOI: 10.1056/NEJMoa1707914 MACE: CANTOS primary endpoint a composite of MI, Stroke and CV death  MI: Myocardial Infarction, component of primary endpoint. Urgent revascularization procedures is a component of a statistically significant key secondary endpoint

ACZ885 is an investigational compound for cardiovascular risk reduction and has not been approved by any regulatory or health authority for cardiovascular risk reduction.
RTH258: Potential to address unmet needs vs. current therapies

- RTH258 (Brolucizumab) met the primary endpoint of non-inferiority vs. aflibercept in change in BCVA from baseline to Week 48\(^1\)
- Significantly fewer patients treated with RTH258 showed signs of disease activity\(^1,2\) as well as retinal fluids (IRF and/or SRF)\(^1,3\)
- RTH258 delivered superior reductions in retinal thickness (CST) due to fluid accumulation versus aflibercept\(^1,3\)
- Majority of RTH258 patients exclusively maintained on q12w dosing interval immediately following loading phase through week 48\(^1,4\)

2. Prespecified secondary endpoint in both HAWK and HARRIER with confirmatory analysis in HAWK (brolucizumab 6 mg vs aflibercept 2 mg). Week 16 disease activity assessed by: decrease in BCVA of > 5 letters compared with baseline, decrease in BCVA of > 3 letters and CST increase > 75µm compared with week 12, decrease in BCVA of > 5 letters due to neovascular AMD disease activity compared with week 12, new or worse intraretinal cysts (IRC) / intraretinal fluid (IRF) compared with week 12.  
3. Prespecified secondary endpoint in both HAWK and HARRIER with confirmatory analysis in HAWK (brolucizumab 6 mg vs aflibercept 2 mg).  
4. Prespecified secondary endpoint. Illustration: Dosing regimen referenced according to label for aflibercept, brolucizumab based on q12w regime in HAWK & HARRIER; fluid resolution defined as presence of retinal fluids, key markers of disease activity (prespecified secondary endpoint in both HAWK and HARRIER with confirmatory analysis in HAWK; brolucizumab 6 mg vs aflibercept 2 mg).
Pharmaceuticals: Driving Growth

1. Prioritizing to win in our core therapeutic areas

2. Demonstrating executional excellence through Cosentyx® and Entresto®

3. Poised for future growth, fueled by a strong late stage pipeline