A SUCCESSFUL YEAR

Merck FY 2016 results

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March 9, 2017

Disclaimer

Cautionary Note Regarding Forward-Looking Statements and financial indicators
This communication may include "forward-looking statements." Statements that include words such as "anticipate," "expect," "should," "would," "intend," "plan," "project," "seek," "believe," "will," and other words of similar meaning in connection with future events or future operating or financial performance are often used to identify forward-looking statements. All statements in this communication, other than those relating to historical information or current conditions, are forward-looking statements. We intend these forward-looking statements to be covered by the safe harbor provisions for forward-looking statements in the Private Securities Litigation Reform Act of 1995. These forward-looking statements are subject to a number of risks and uncertainties, many of which are beyond control of Merck KGaA, Darmstadt, Germany, which could cause actual results to differ materially from such statements.

Risks and uncertainties include, but are not limited to: the risks of more restrictive regulatory requirements regarding drug pricing, reimbursement and approval; the risk of stricter regulations for the manufacture, testing and marketing of products; the risk of destabilization of political systems and the establishment of trade barriers; the risk of a changing marketing environment for multiple sclerosis products in the European Union; the risk of greater competitive pressure due to biosimilars; the risks of research and development; the risks of discontinuing development projects and regulatory approval of developed medicines; the risk of a temporary ban on products/production facilities or of non-registration of products due to non-compliance with quality standards; the risk of an import ban on products to the United States due to an FDA warning letter; the risks of dependency on suppliers; risks due to product-related crime and espionage; risks in relation to the use of financial instruments; liquidity risks; counterparty risks; market risks; risks of impairment on balance sheet items; risks from pension obligations; risks from product-related and patent law disputes; risks from antitrust law proceedings; risks from drug pricing by the divested Generics Group; risks in human resources; risks from e-crime and cyber attacks; risks due to failure of business-critical information technology applications or to failure of data center capacity; environmental and safety risks; unanticipated contract or regulatory issues; a potential downgrade in the rating of the indebtedness of Merck KGaA, Darmstadt, Germany; downward pressure on the common stock price of Merck KGaA, Darmstadt, Germany and its impact on goodwill impairment evaluations; the impact of future regulatory or legislative actions; and the risks and uncertainties detailed by Sigma-Aldrich Corporation ("Sigma-Aldrich") with respect to its business as described in its reports and documents filed with the U.S. Securities and Exchange Commission (the "SEC").

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This quarterly presentation contains certain financial indicators such as EBITDA pre exceptionals, net financial debt and earnings per share pre exceptionals, which are not defined by International Financial Reporting Standards (IFRS). These financial indicators should not be taken into account in order to assess the performance of Merck in isolation or used as an alternative to the financial indicators presented in the consolidated financial statements and determined in accordance with IFRS. The figures presented in this quarterly statement have been rounded. This may lead to individual values not adding up to the totals presented.

Agenda

01 EXECUTIVE SUMMARY

Highlights 2016

Execution on strategy

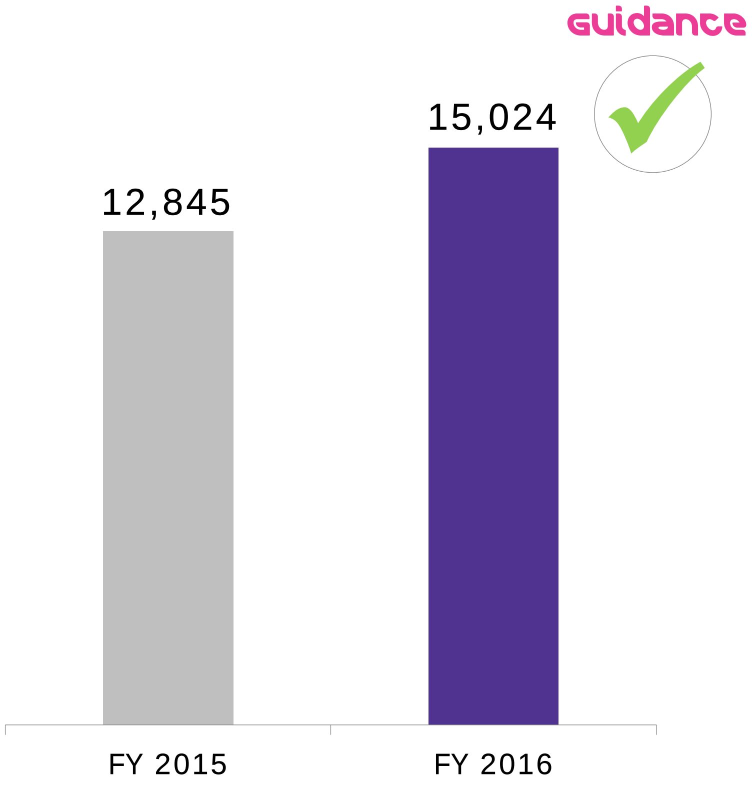
- Healthcare – solid commercial performance and first pipeline filings
- Life Science – above-market growth amid seamless integration
- Performance Materials – four pillar strategy supports profitability and innovation

Delivery of financials

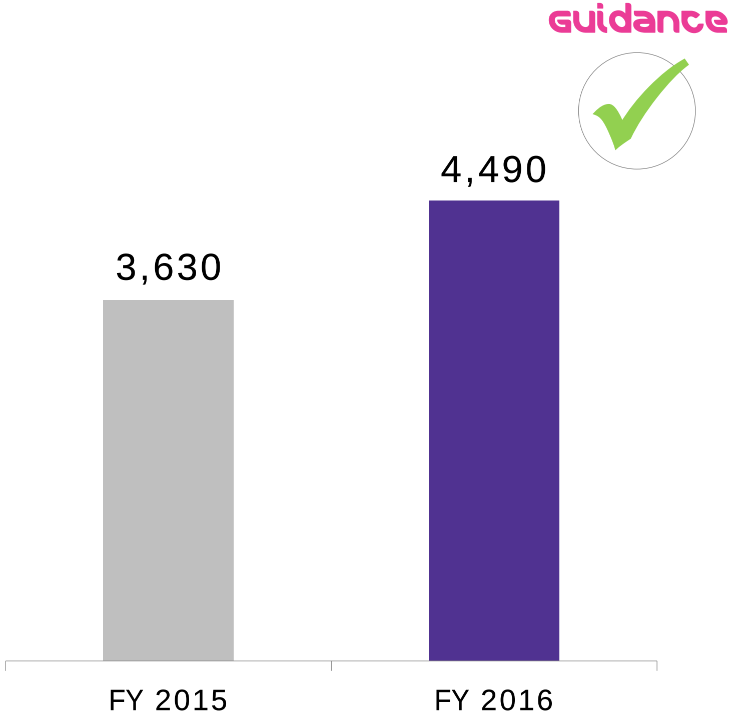
- Organic growth across all regions and profitability expansion
- Delivery of targets: Net sales €15 bn, EBITDA pre €4.49 bn, EPS pre €6.21
- Strong operating cash flow of €2.5 bn allows for significant deleveraging

Strong financials and delivery of targets

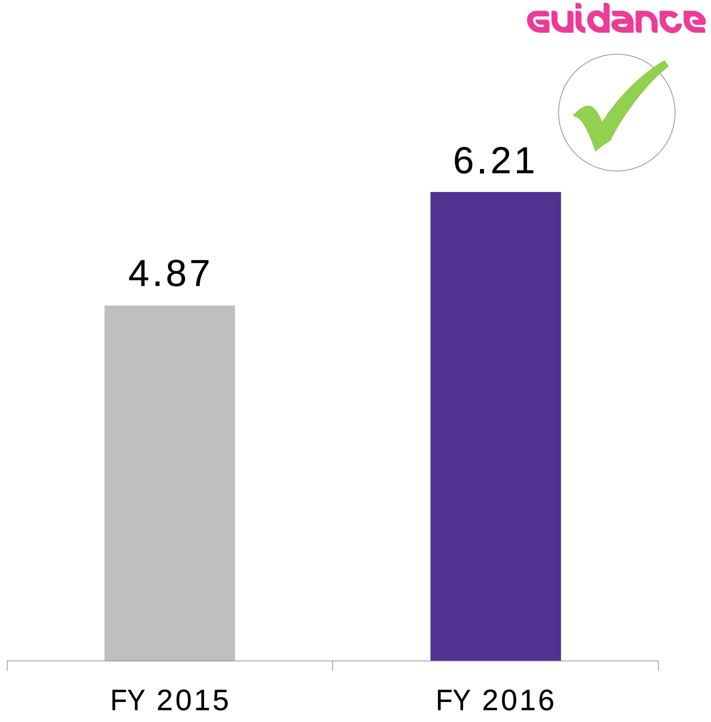
Net sales [€ m]



EBITDA pre [€ m]

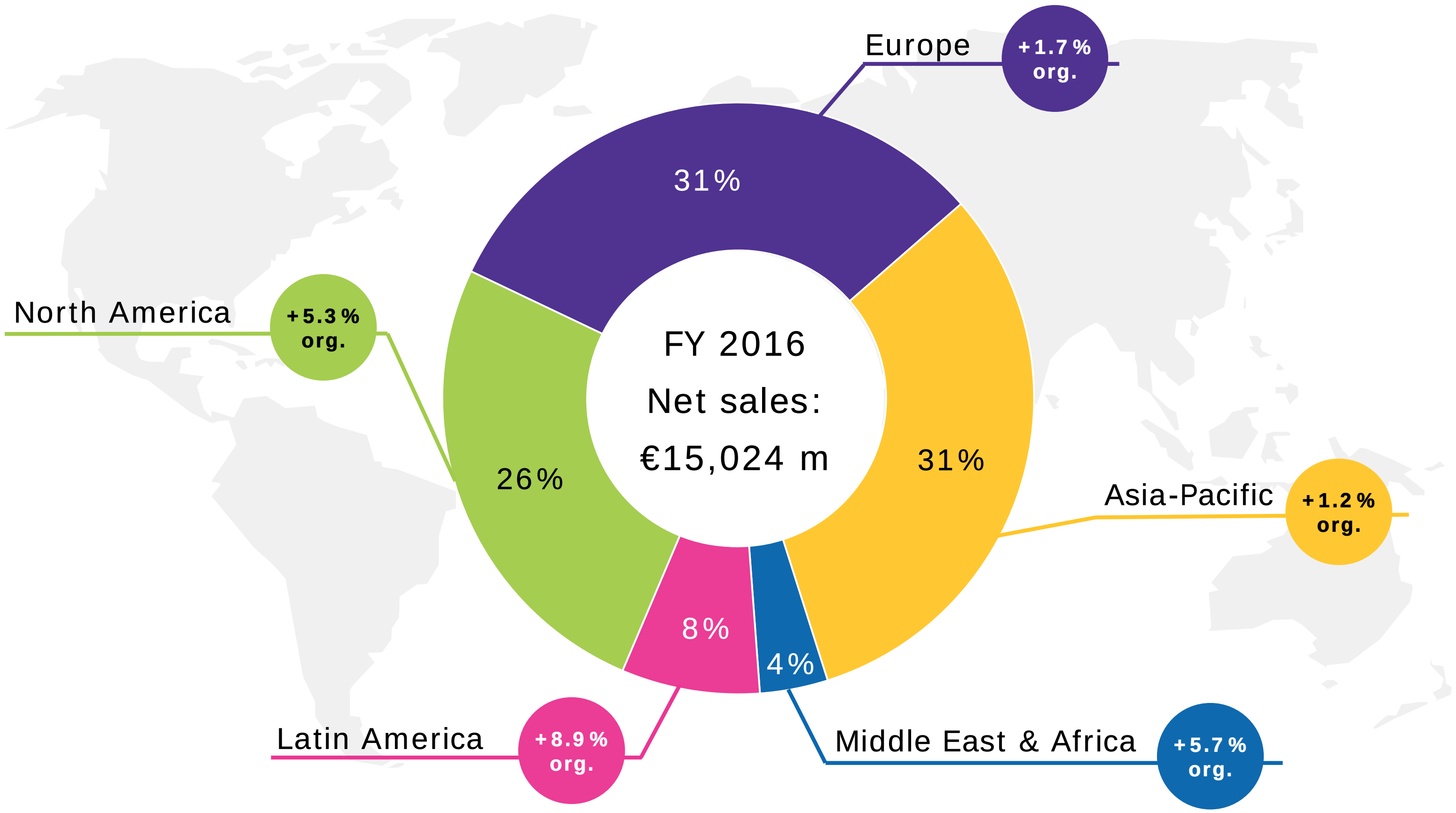


EPS pre [€]



Organic growth in all regions

Regional breakdown of net sales [€ m]



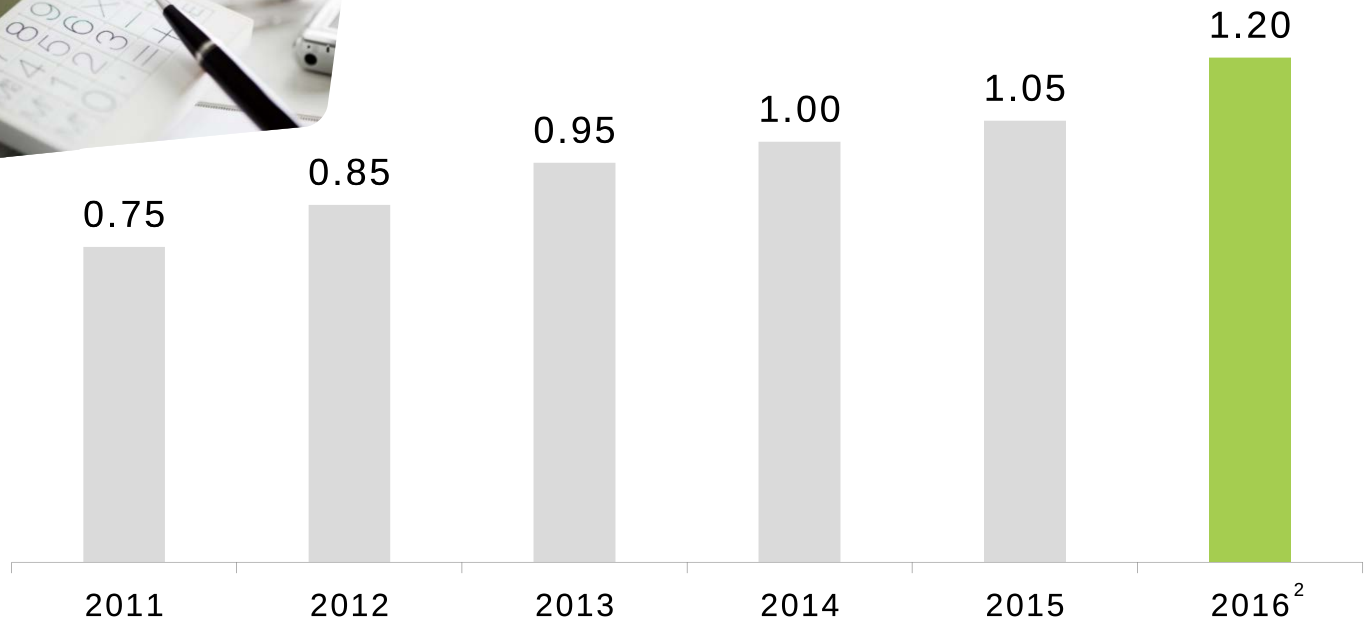
Regional organic development

- Organic growth in Europe driven by robust demand in Process Solutions
- Strong U.S. development of Fertility franchise, Xalkori co-promotion and solid Process Solutions yield sound growth
- Asia-Pacific shows slight organic growth driven by Healthcare and Life Science offsetting negative LC environment
- Good organic development in LatAm and MEA driven by all relevant businesses, especially GM, CH and Applied Solutions

LC=Liquid Crystals; GM=General Medicine (includes CardioMetabolic Care & General Medicine and Others); CH=Consumer Health

Sustainable dividend development

Dividend[1] development 2011-2016



2016 dividend

- Dividend of €1.20 per share proposed[2] for 2016, reflecting 19.3% of EPS pre
- Dividend development in line with business performance and earnings progression
- Dividend yield[3] of 1.21%

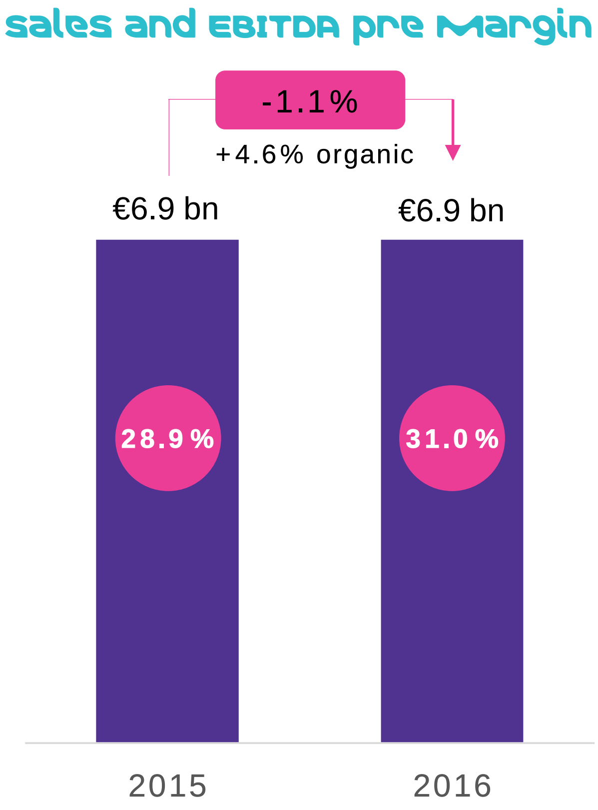
[1]Adjusted for share split, which has been effective since June 30, 2014; [2]Final decision subject to Annual General Meeting approval; [3]Calculated with 2016 year-end share price of 99.15€ per share

02 STRATEGIC REVIEW

Healthcare: Solid base business and first pipeline submissions

Business performance

- Defending Rebif
- Leveraging strength in Fertility
- General Medicine portfolio driven by growth markets
- Delivery on product repatriations
- Successful life-cycle-management



Pipeline

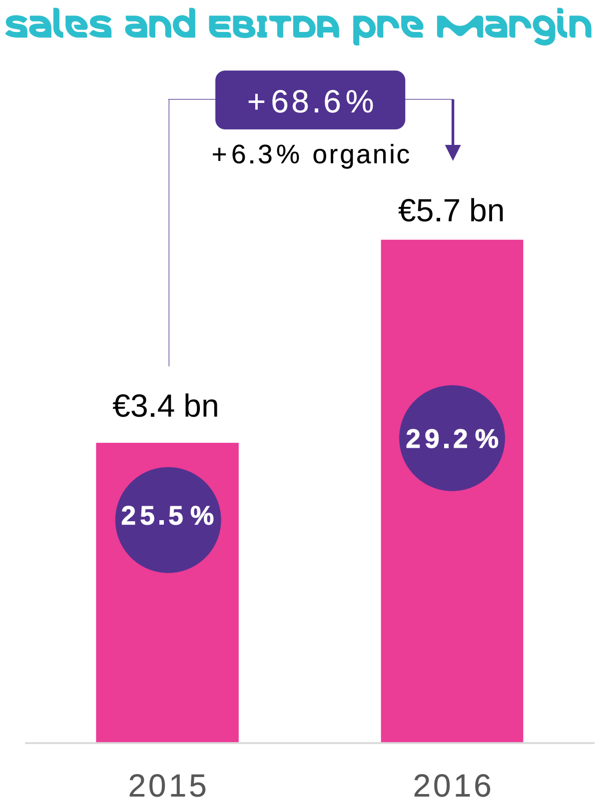
- Cladribine tablets filed in Europe
- Filing of avelumab for Merkel Cell carcinoma in the U.S. and Europe
- Avelumab progresses with nine Phase III studies and increasing Investigator Sponsored Studies (ISS)
- Progressing with three Phase II studies for BTK-i (RA, SLE and MS)

Totals may not add up due to rounding

Life Science: Profitable growth amid Sigma integration

Business performance

- Quality growth above the market
- All businesses contributing
- Good performance of legacy Sigma business
- Ongoing product innovation



Integration

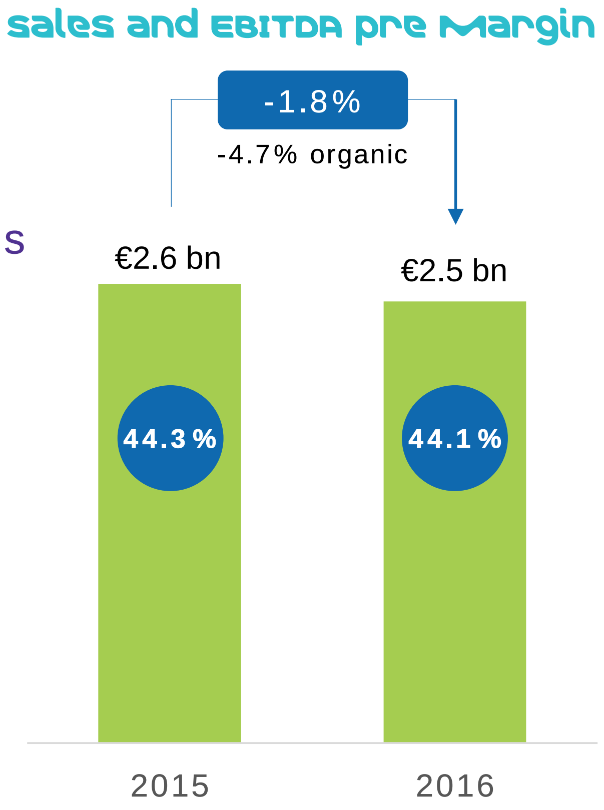
- Organizational structure implemented
- Strong cultural fit
- Faster implementation of cost synergies in 2016 than planned
- Expecting additional growth from top-line synergies

Totals may not add up due to rounding

Performance Materials: Driving innovation despite a challenging display market

Business performance

- Successfully managed challenging market dynamics in Display Materials
- Record year for Pigments with strong development of coatings and cosmetic functionals
- Above-market growth of Integrated Circuits fueled by technology trends
- Further progress towards OLED leadership; opening of new production facility



Innovation

- LC Windows – investment in production facility
- European Frost & Sullivan Award for innovative Meoxal & Xirallic pigments
- License agreement with Nanoco – enhancing position in quantum materials

Totals may not add up due to rounding

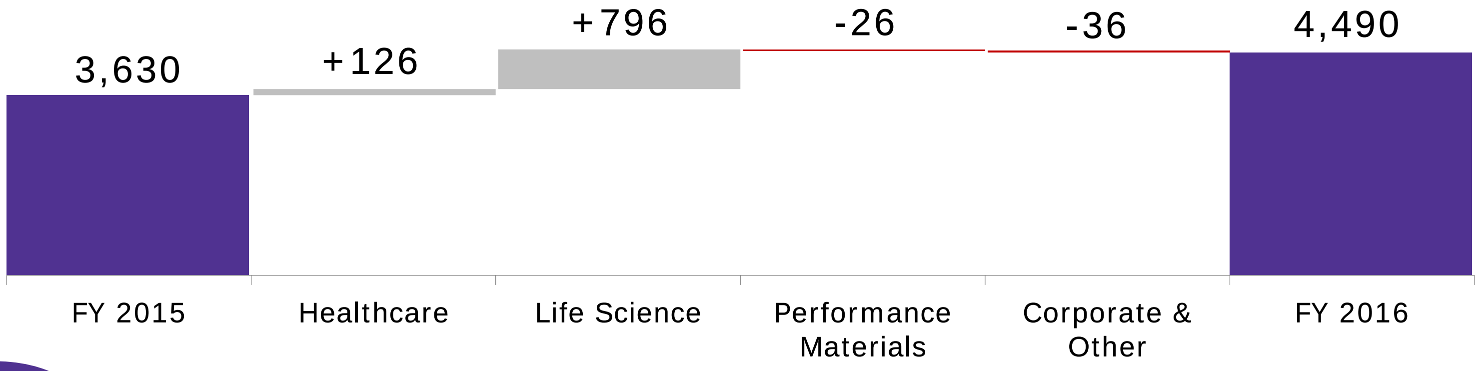
03 FINANCIAL OVERVIEW

Life Science and Healthcare drive growth and profitability

FY 2016 YoY net sales

	Organic	Currency	Portfolio	Total
Healthcare	4.6%	-4.6%	-1.1%	**-1.1%**
Life Science	6.3%	-0.8%	63.1%	**68.6%**
Performance Materials	-4.7%	0.2%	2.7%	**-1.8%**
Merck Group	3.2%	-2.6%	16.4%	**17.0%**

FY 2016 YoY EBITDA pre contributors [€ m]



- Growth in Healthcare fueled by strong Fertility, GM as well as Xalkori
- Strong organic growth in Life Science driven by all businesses, esp. Process Solutions
- Organic decline in Performance Materials reflects destocking in display supply chain
- Portfolio effects reflect Sigma and Kuvan

- HC benefits from solid organic growth and end of Rebif commission expenses, outweighing higher R&D costs
- Sigma, strong organic growth and positive business mix drive Life Science
- Performance Materials slightly lower due to Liquid Crystals sales decline
- Corporate EBITDA pre contains hedging and investments in corporate initiatives

Totals may not add up due to rounding

FY 2016: Overview

Key figures

[€m]	FY 2015	FY 2016	Δ
Net sales	12,845	**15,024**	17.0%
EBITDA pre	3,630	**4,490**	23.7%
Margin (in % of net sales)	*28.3%*	*29.9%*	
EPS pre	4.87	**6.21**	27.5%
Operating cash flow	2,195	**2,518**	14.7%

[€m]	Dec. 31, 2015	Dec. 31, 2016	Δ
Net financial debt	12,654	**11,513**	-9.0%
Working capital	3,438	**3,486**	1.4%
Employees	49,613	**50,414**	1.6%

Comments

- EBITDA pre & margin increase driven by Sigma, organic performance and end of Rebif commission expenses
- EPS pre additionally supported by improved financial result
- Healthy operating cash flow driven by business performance and Sigma
- Net financial debt reflects strong cash generation capabilities and focus on deleveraging
- Working capital increase due to higher business activity and FX

Reported figures reflect solid business performance and Kuvan divestment

Reported results

[€m]	FY 2015	FY 2016	Δ
EBIT	1,843	**2,481**	34.6%
Financial result	-357	**-326**	-8.5%
Profit before tax	1,487	**2,154**	44.9%
Income tax	-368	**-521**	41.7%
Effective tax rate (%)	*24.8%*	***24.2%***	
Net income	1,115	**1,629**	46.1%
EPS (€)	2.56	**3.75**	46.5%

Comments

- EBIT reflects increased EBITDA pre and Kuvan disposal gain amid integration costs and D&A from Sigma
- Financial result improvement driven by lower hedging costs; LY included costs for early Sigma bond redemption
- Effective tax rate within guidance range of ~23% to 25%

Totals may not add up due to rounding

Healthcare: Solid organic growth and pick-up of pipeline investments

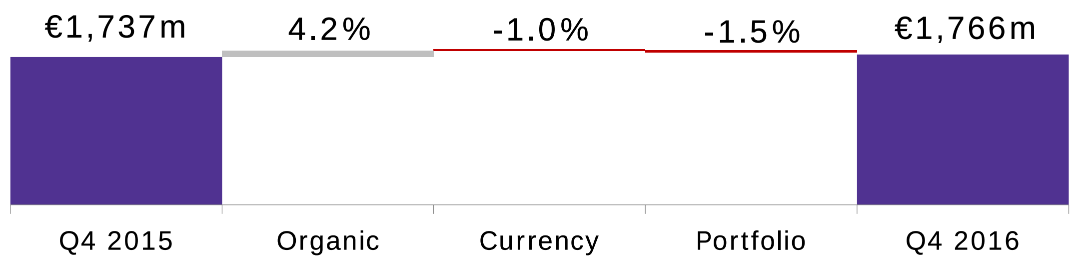
Healthcare P&L

[€m]	Q4 2015	Q4 2016
Net sales	1,737	**1,766**
Marketing and selling	-728	**-709**
Administration	-64	**-68**
Research and development	-283	**-418**
EBIT	213	**279**
EBITDA	522	**478**
EBITDA pre	524	**497**
Margin (in % of net sales)	*30.2%*	***28.2%***

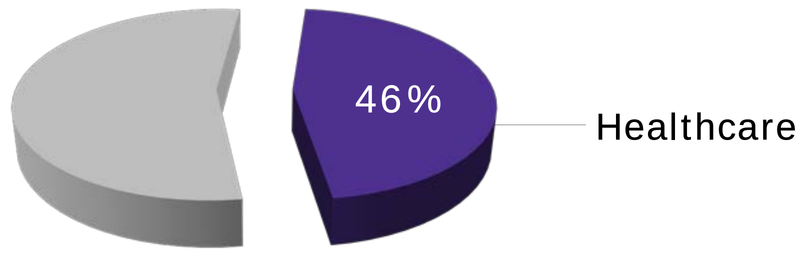
Comments

- Rebif stable, volume erosion in EU due to competition is outweighed by U.S. pricing and higher U.S. year-end demand due to pharmacy stocking
- Moderate organic decline of Erbitux driven by mandatory EU price cuts and competition offsetting volume growth in China and Brazil
- Fertility portfolio remains strong, especially in U.S. and China, despite softer Gonal-f sales
- Marketing & selling reflect end of commission expenses for Rebif (U.S.) partially offset by year-end investments in launch preparations
- R&D spend pick-up reflects progress of key pipeline projects (avelumab, TGF-beta, BTK-i); low base last year
- Lower EBITDA pre and margin due to higher R&D costs

Net sales bridge



Q4 2016 share of group net sales



Totals may not add up due to rounding

Life Science: Record sales quarter amid tough comparables

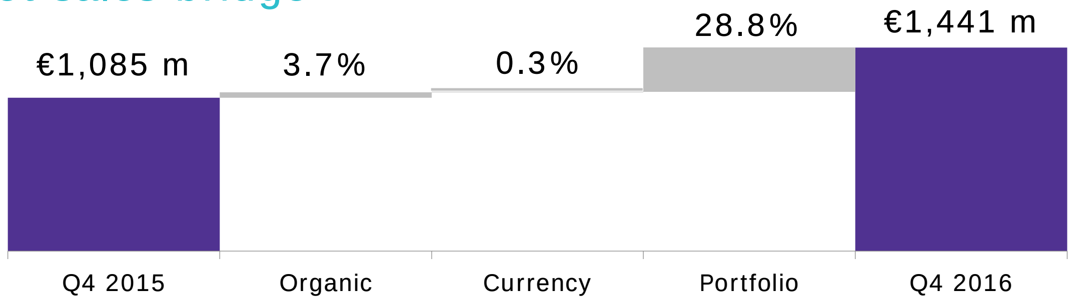
Life Science P&L

[€m]	Q4 2015	Q4 2016
Net sales	1,085	**1,441**
Marketing and selling	-324	**-458**
Administration	-63	**-71**
Research and development	-59	**-70**
EBIT	34	**70**
EBITDA	161	**352**
EBITDA pre	271	**419**
Margin (in % of net sales)	*25.0%*	***29.1%***

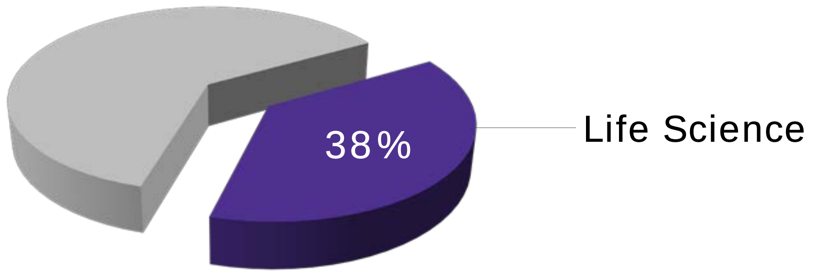
Comments

- Process Solutions growth driven by single-use products and services business, however some customer orders delayed
- Good demand from EU and U.S. pharma for biomonitoring yields solid organic growth of Applied Solutions
- Research Solutions shows slight organic growth – growth in Europe and Asia is almost offset by lower demand in the U.S.
- Absolute costs higher due to Sigma and investments in Process Solutions field force
- Strong profitability reflects Sigma, business mix & synergy ramp-up

Net sales bridge



Q4 2016 share of group net sales



Totals may not add up due to rounding

Performance Materials: Resilient profitability despite tougher LC environment

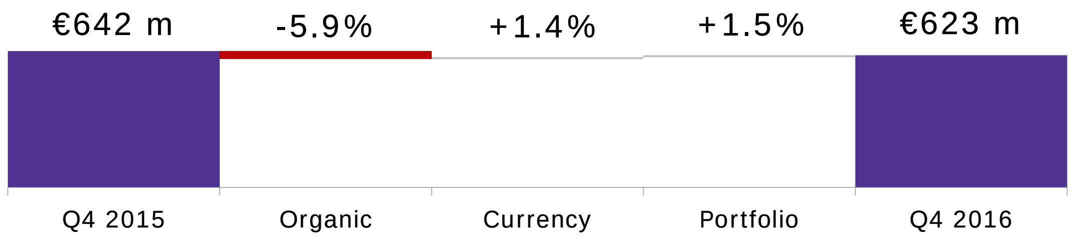
Performance Materials P&L

[€m]	Q4 2015	Q4 2016
Net sales	642	**623**
Marketing and selling	-54	**-57**
Administration	-15	**-16**
Research and development	-52	**-56**
EBIT	193	**210**
EBITDA	257	**269**
EBITDA pre	263	**278**
Margin (in % of net sales)	*40.9%*	***44.6%***

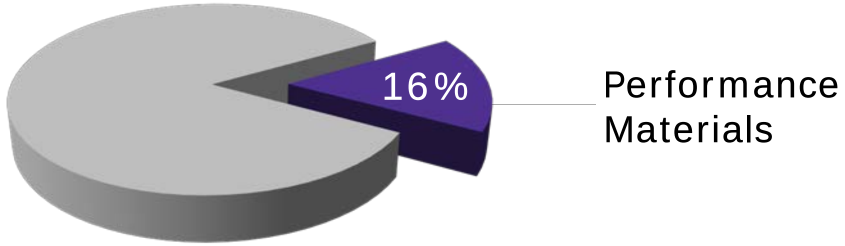
Comments

- 2016 display industry destocking still muting Liquid Crystals amid first signs of a normalization of market shares
- Innovative UB-FFS technology with record quarter, SA-VA launch in H2 2017
- Strong growth of Integrated Circuit Materials driven by all major material classes, esp. strong dielectrics demand for complex structures
- Solid growth of Pigments & Functionals due to demand for automotive coating pigments and highly differentiated functional materials
- Resiliently strong profitability reflects leading market position in four high-margin businesses

Net sales bridge

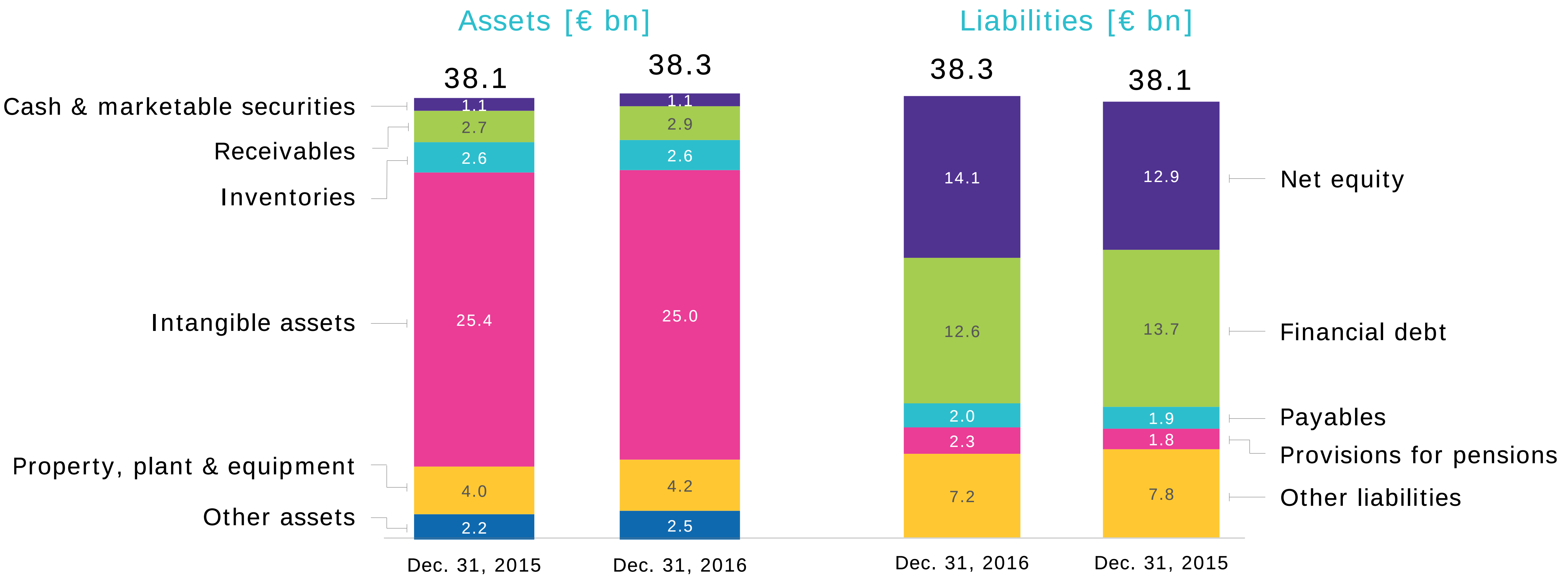


Q4 2016 share of group net sales



Totals may not add up due to rounding

Balance sheet – focus on rapid deleveraging



- Ongoing amortization of Sigma-related intangible assets
- Significant reduction of financial debt
- Decline in interest rates drives increase in pension provisions
- Net equity increase reflects net income and FX

Previous year figures adjusted after finalization of purchase price allocation of Sigma-Aldrich acquisition
Totals may not add up due to rounding

High EBITDA pre drives strong operating cash flow

Q4 2016 – cash flow statement

[€m]	Q4 2015	Q4 2016	Δ
Profit after tax	127	**265**	138
D&A	505	**548**	43
Changes in provisions	183	**-9**	-192
Changes in other assets/liabilities	-289	**-191**	98
Other operating activities	-5	**-17**	-12
Changes in net working capital	196	**191**	-5
Operating cash flow	718	**787**	69
Investing cash flow	-14,606	**-450**	-14,156
thereof Capex on PPE	-217	**-260**	-43
Financing cash flow	2,833	**-277**	-3,110

Cash flow drivers

- D&A increases due to Sigma, LY contains evofosfamide impairment
- Changes in provisions last year mainly reflect provision build-up for evofosfamide
- Investing cash flow reflects capex and Biocontrol; LY contains Sigma purchase
- Capex higher due to HQ, Sigma and investments in China
- Financing cash flow reflects repayment of debt; commercial paper issuance LY

Totals may not add up due to rounding

04 OUTLOOK AND GUIDANCE

Qualitative Merck full-year 2017 guidance

Net sales: Slight to moderate organic growth

EBITDA pre: About stable*

EBITDA pre growth drivers

- Organic net sales growth with all 3 businesses contributing
- Sigma-Aldrich incremental cost and revenue synergies of ~+€80m YoY
- Rebif U.S. price increase as of January 2017
- Avonex royalty income for additional 6 months in 2017
- Swap of royalty & license income stream with net benefit of mid to high double-digit €m

EBITDA pre growth burdens

- R&D costs increase 2017 in Healthcare: ongoing progress of pipeline and Vertex in-licensing
- Healthcare margins negatively impacted by product mix
- Fertility growth less fueled by favorable competitive situation in U.S.
- Elimination of 2016 one-time effects (disposal gain Q2, reversal R&D termination provisions) ~-€90m YoY

*Defined as low positive or low negative % variation

2017 business sector guidance

Healthcare

Net sales

- Slight organic growth
- Ongoing organic Rebif decline
- Other franchises growing; Glucophage repatriation in China supportive

EBITDA pre

- YoY % decline in the high single digits
- Higher R&D investments, mix effects and 2016 positive one-time effects mitigated by higher royalty income

Life Science

Net sales

- Organic growth slightly above market; driven by Process Solutions
- First contribution from top-line synergies

EBITDA pre

- % YoY growth in the high single digits to low teens
- Sigma synergies and organic growth contributing

Performance Materials

Net sales

- Slight organic growth
- Volume increases in all businesses
- Continuation of slight LC market share normalization cannot be ruled out

EBITDA pre

- Slight increase YoY

APPENDIX

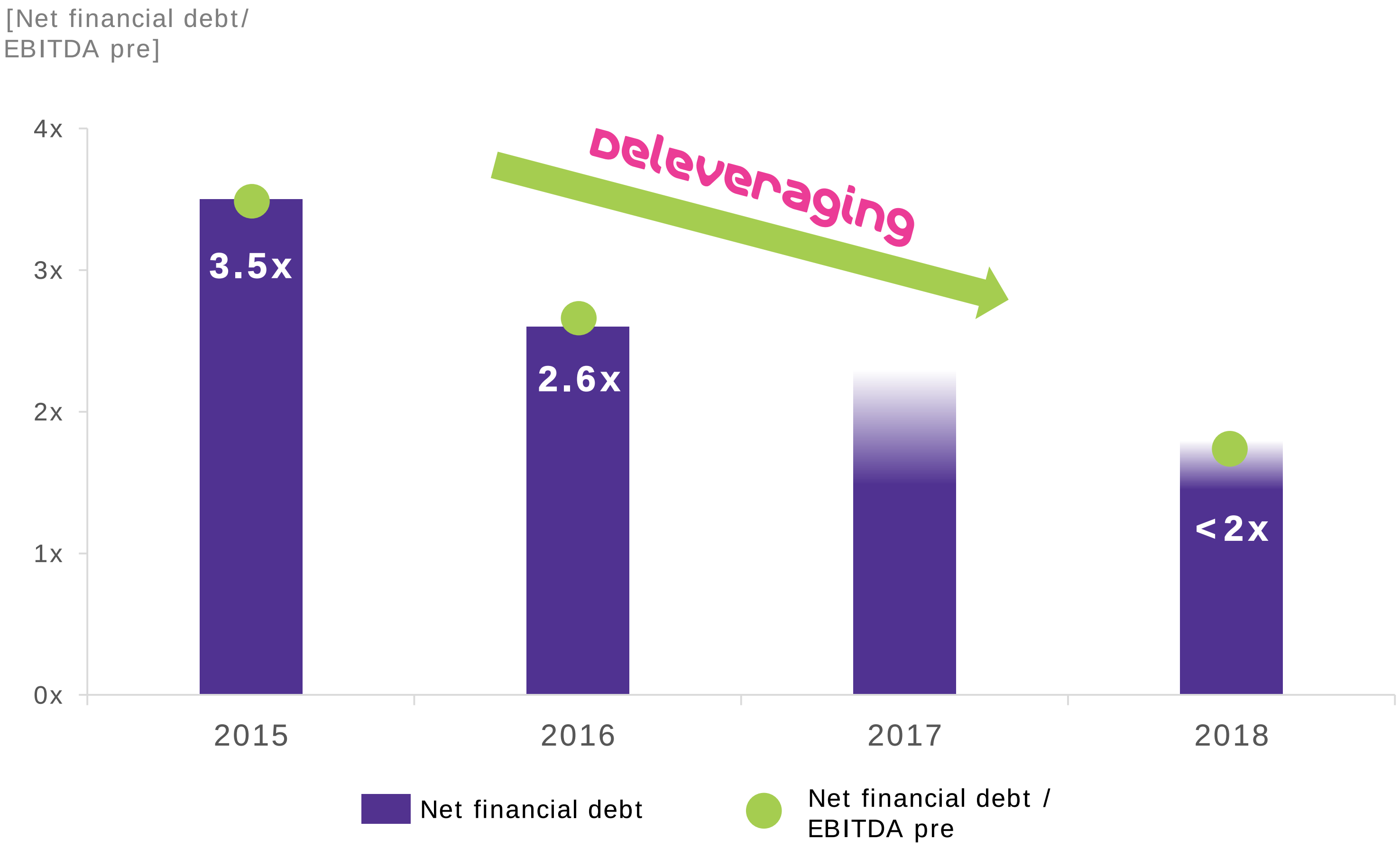
Additional financial guidance 2017

Further financial details

Corporate & Other EBITDA pre	**~ -€350 – -380m**
Interest result	**~ -€250 – -260 m**
Effective tax rate	**~ 23% to 25%**
Capex on PPE	**~ €850 – 900 m**
Hedging/USD assumption	**2017 hedge ratio ~50% at EUR/USD ~ 1.11 to 1.12**
2017 Ø EUR/USD assumption	**~ 1.06 – 1.10**

Strong focus on cash generation to ensure swift deleveraging

Net financial debt* and leverage development



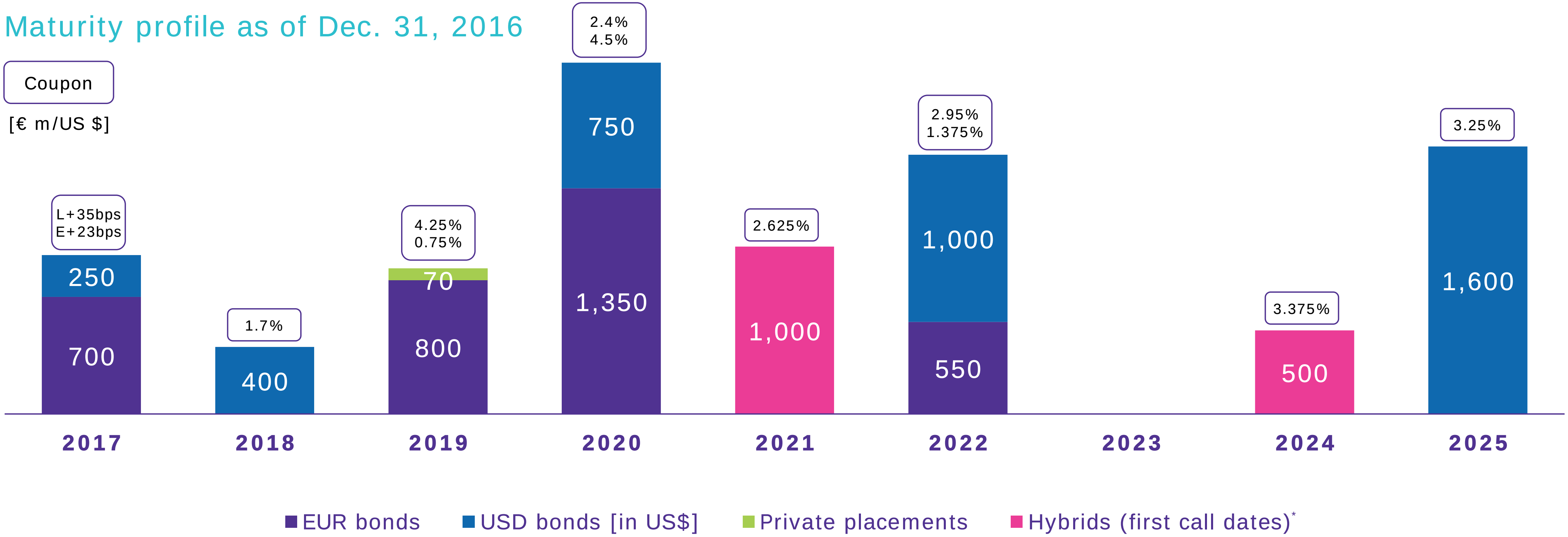
Focus on deleveraging

- Commitment to swift deleveraging to ensure a strong investment grade credit rating and financial flexibility
- Strong cash flow will be used to drive down leverage to expected <2x net debt/EBITDA pre in 2018
- Larger acquisitions (>€500 m) ruled out for the next two years (or financed by divestments)

*Net financial debt (without pensions)

Well-balanced maturity profile reflects capital market transactions related to Sigma-Aldrich

Maturity profile as of Dec. 31, 2016



Financing structure enables flexible and swift deleveraging

*No decision on call rights taken yet

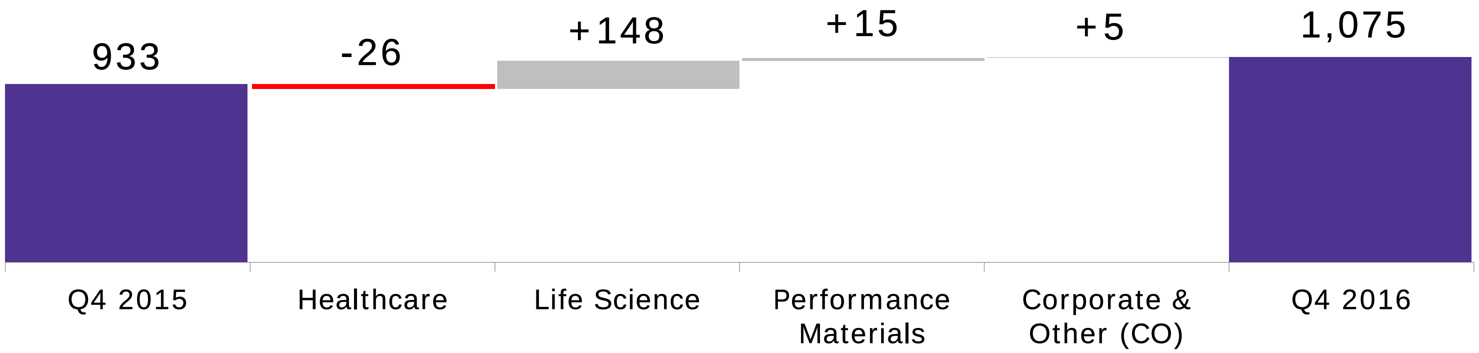
Seamless Sigma integration and organic growth drive EBITDA pre

Q4 2016 YoY net sales

	Organic	Currency	Portfolio	Total
Healthcare	4.2%	-1.0%	-1.5%	**1.7%**
Life Science	3.7%	0.3%	28.8%	**32.8%**
Performance Materials	-5.9%	1.4%	1.5%	**-3.0%**
Merck Group	2.2%	-0.1%	8.5%	**10.6%**

- Solid organic growth of Healthcare driven by strong Fertility, Xalkori commissions and stable Rebif sales, offsetting softer Erbitux
- Life Science organic growth reflects phasing of larger orders in Process Solutions
- LC market share normalization impacts PM
- Portfolio reflects Sigma and Kuvan

Q4 YoY EBITDA pre contributors [€ m]



- Healthcare reflects higher R&D and M&S costs offsetting end of Rebif commissions, organic growth and higher royalty income
- LS driven by Sigma portfolio effect, moderate organic growth and synergies
- Performance Materials slightly higher, but versus weak comparables

Totals may not add up due to rounding

Q4 2016: Overview

Key figures

[€m]	Q4 2015	Q4 2016	Δ
Net sales	3,464	**3,830**	10.6%
EBITDA pre	933	**1,075**	15.1%
Margin (in % of net sales)	*26.9%*	*28.1%*	
EPS pre	1.13	**1.43**	26.5%
Operating cash flow	718	**787**	9.6%

[€m]	Dec. 31, 2015	Dec. 31, 2016	Δ
Net financial debt	12,654	**11,513**	-9.0%
Working capital	3,438	**3,486**	1.4%
Employees	49,613	**50,414**	1.6%

Comments

- EBITDA pre increase driven by Sigma, end of Rebif commission expenses and higher royalties, offsetting higher R&D
- EPS pre up due to EBITDA pre increase and improved financial result
- Strong operating cash flow from EBITDA pre progression and improved working capital management in Q4
- Net financial debt reduction reflects strong focus on deleveraging
- Working capital increase due to higher business activity and FX

Reported figures reflect Sigma acquisition

Reported results

[€m]	Q4 2015	Q4 2016	Δ
EBIT	298	**405**	36.0%
Financial result	-134	**-70**	-47.8%
Profit before tax	164	**335**	104.3%
Income tax	-42	**-70**	65.6%
Effective tax rate (%)	*25.9%*	***21.0%***	
Net income	126	**269**	113.8%
EPS (€)	0.29	**0.62**	113.8%

Comments

- EBIT reflects increased EBITDA pre amid integration costs and Sigma D&A
- Financial result contains lower Sigma financing costs; LY included charges for Sigma bond repayment and LTIP
- Improved effective tax rate due to higher profits in low tax jurisdictions
- Guidance range of ~23% to 25% confirmed for 2017

Totals may not add up due to rounding

Healthcare: Good organic growth and product mix drive profitability

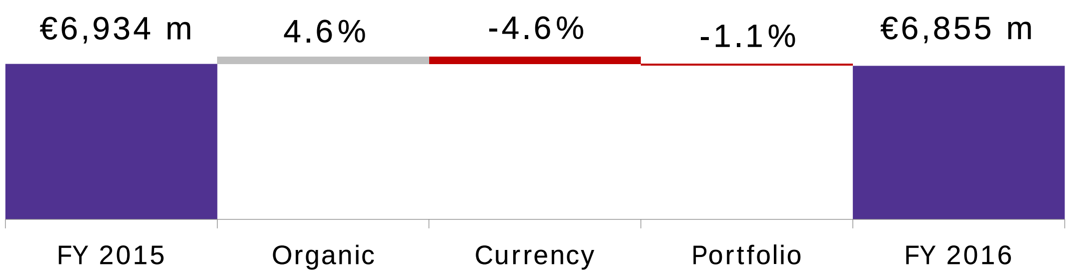
Healthcare P&L

[€m]	FY 2015	FY 2016
Net sales	6,934	**6,855**
Marketing and selling	-2,801	**-2,587**
Administration	-259	**-270**
Research and development	-1,310	**-1,496**
EBIT	1,097	**1,593**
EBITDA	1,970	**2,425**
EBITDA pre	2,002	**2,128**
Margin (in % of net sales)	*28.9%*	***31.0%***

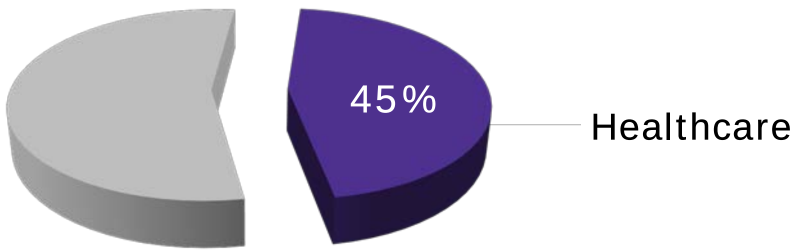
Comments

- Rebif still impacted by ramp-up of competition in Europe, while U.S. pricing and PDP* in Brazil support performance
- Erbitux shows slight organic growth as volume expansion in emerging markets more than offset mandatory price cuts and competition in EU
- Strong Fertility driven by favorable competitive situation in the U.S.
- Marketing & selling reflects end of commission expenses for Rebif (U.S.) partially offset by reinvestments in sales force & launch preparations
- R&D spend increases as pipeline development progresses
- EBIT reflects Kuvan disposal gain of €330m in 2016
- Profitability improves due to solid organic growth and end of Rebif commissions

Net sales bridge



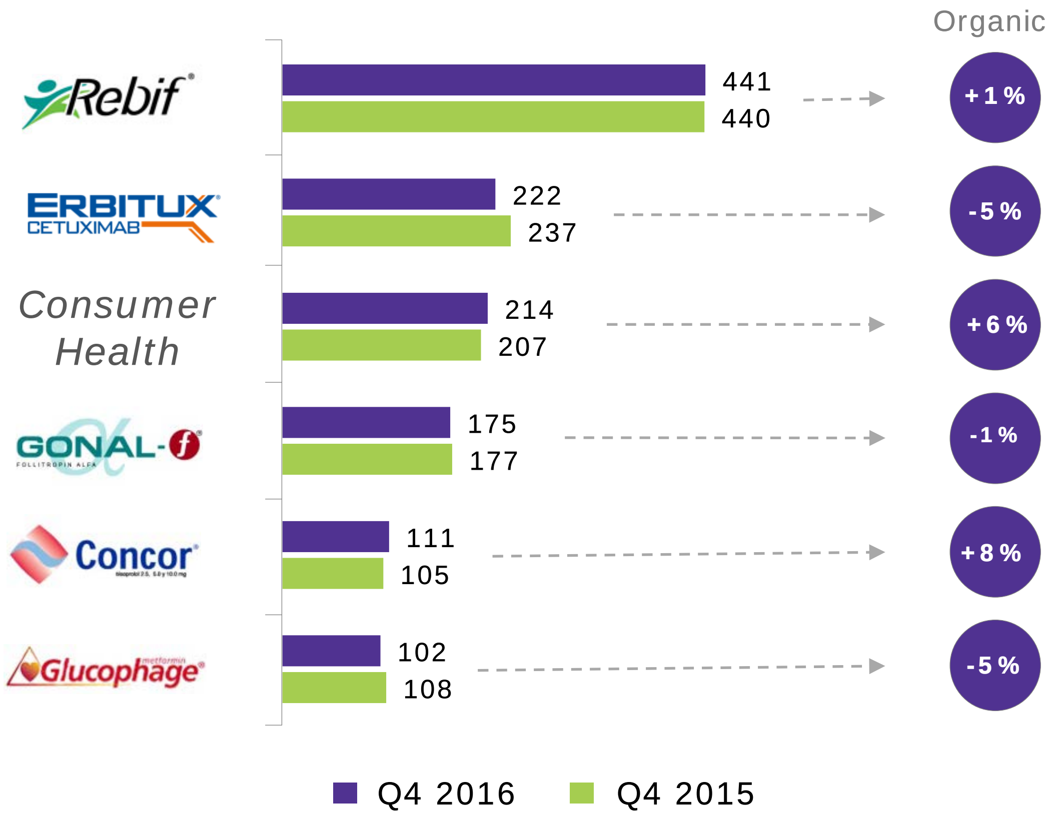
FY 2016 share of group net sales



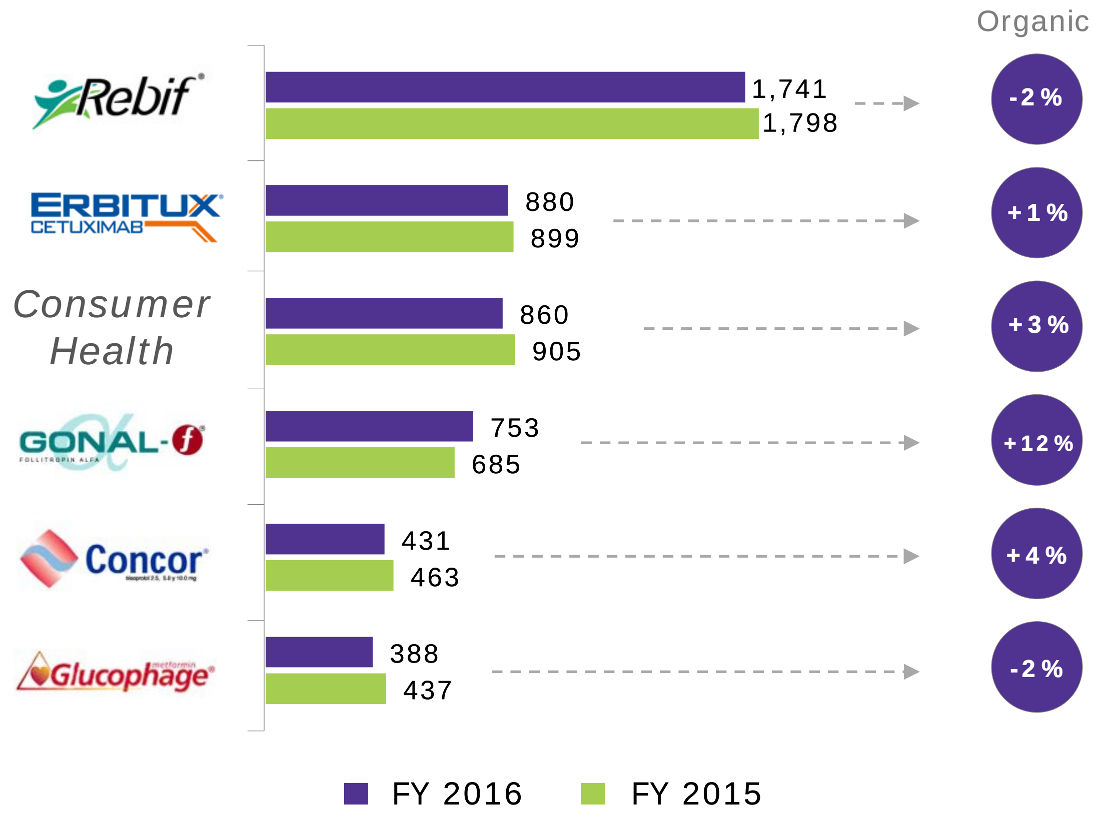
*Productive Development Partnership
Totals may not add up due to rounding

Healthcare organic growth by franchise / product

Q4 2016 organic sales growth [%] by key product [€ m]

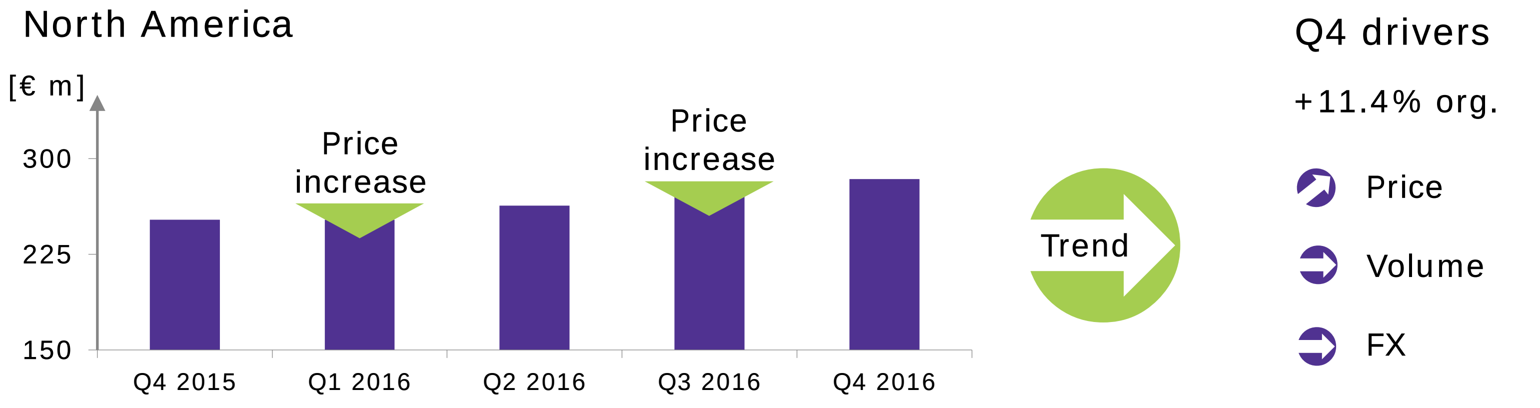


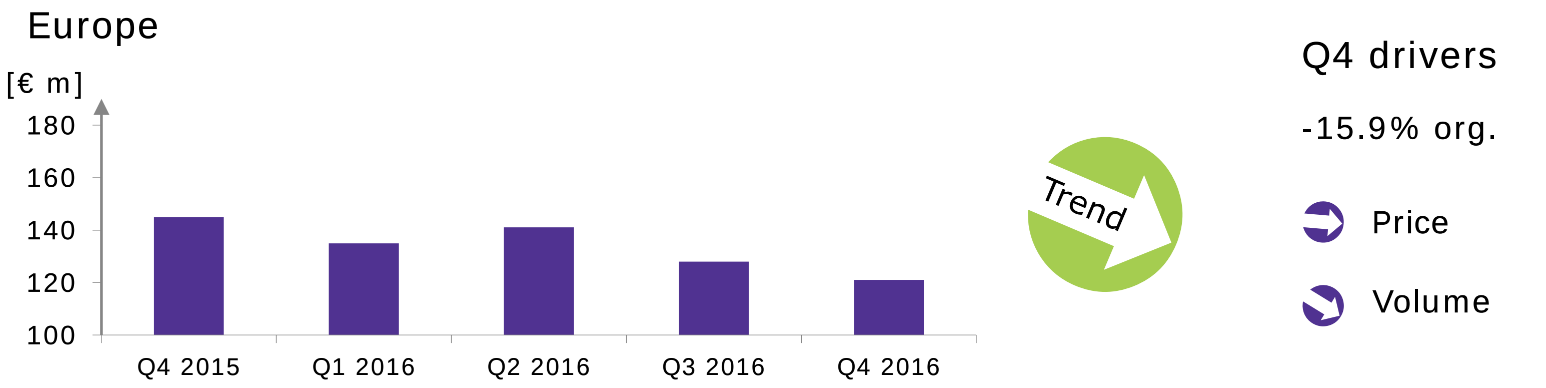
FY 2016 organic sales growth [%] by key product [€ m]



Rebif: Relief in the U.S. – competitive ramp-up in Europe ongoing

Rebif sales evolution



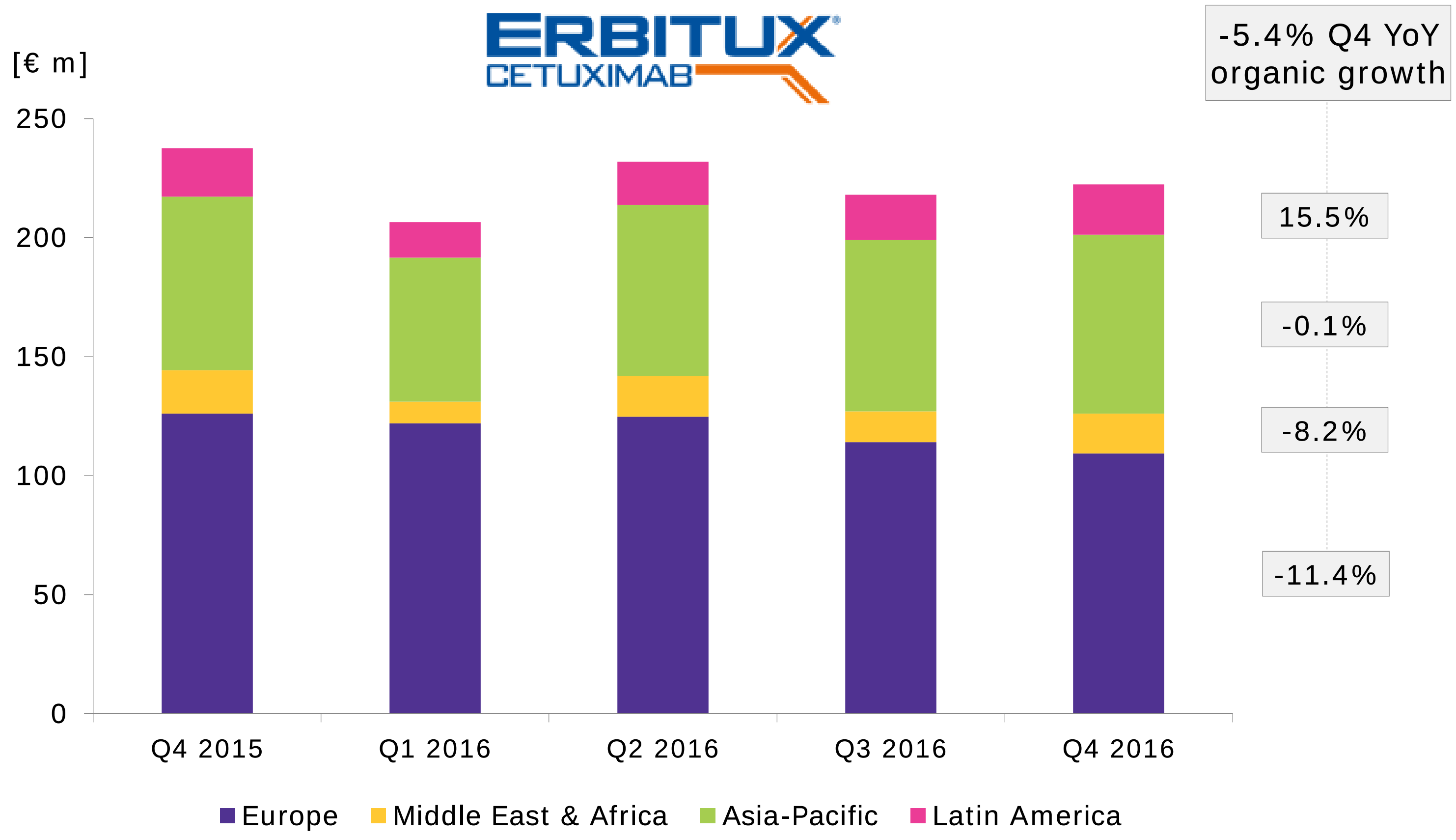


Rebif performance

- Rebif sales of €441 m in Q4 2016 reflect stable organic sales amid slight negative FX effects mainly from LatAm
- U.S. performance was positively influenced by year-end demand due to pharmacy inventory stocking
- Market share within interferons stable due to high retention rates and long-term safety track record
- U.S. pricing & market share stabilization partially offset decline of interferon class
- Ongoing volume decline in Europe due to phased market entry of orals

Erbitux: A challenging market environment

Erbitux sales by region



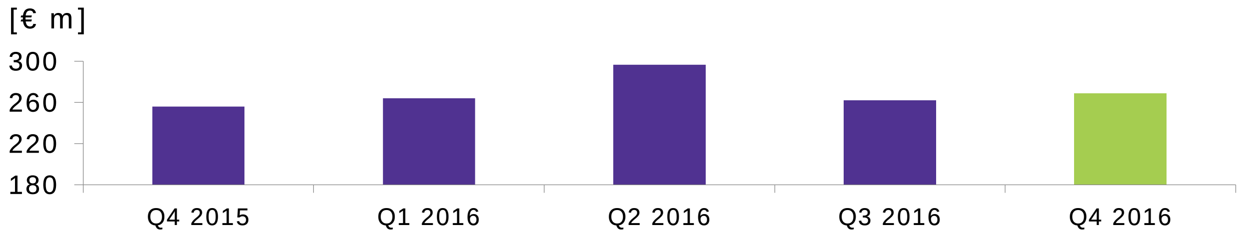
Erbitux performance

- Sales decrease to €222m due to moderate organic decline and FX headwinds mainly from LatAm
- Europe organically lower in ongoing tough environment (price & competition)
- Asia-Pacific shows strong volume growth in China offset by softness in Japan
- Organic growth in LatAm reflects growing demand especially in Brazil

Solid organic growth in Fertility, General Medicine and Endocrinology

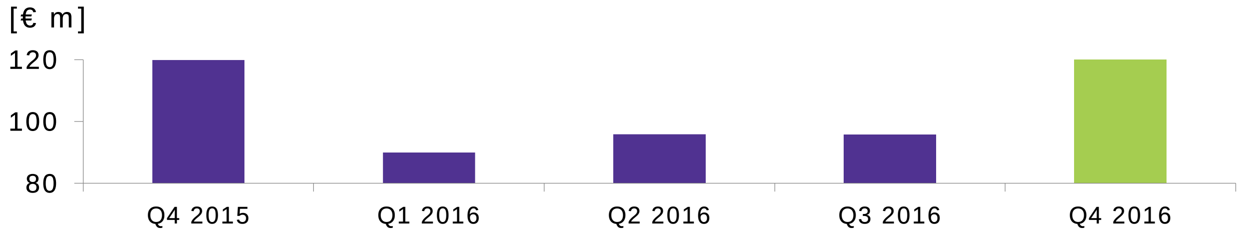
Sales evolution

Fertility



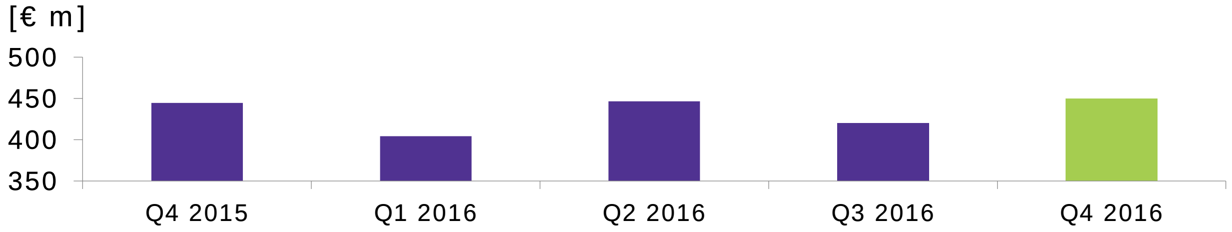
Organic
6.1% org.

Endocrinology



Organic
19.9% org.

General Medicine (GM)*



Organic
3.6% org.

Q4 drivers

- Fertility shows ongoing growth especially in the U.S. and China
- Gonal-f flat as growth in the U.S. is offset by slight uptake of biosimilars in Europe and softer demand in MEA
- Sales jump in Endocrinology reflects slight volume growth and larger release of accruals for rebates
- GM organic sales growth driven by solid developments in all growth markets; neg. FX from LatAM and China
- Glucophage still impacted by phasing of tenders especially in MEA

*includes “CardioMetabolic Care & General Medicine and Others

MERCK

Merck pipeline

Phase I

Tepotinib – c-Met kinase inhibitor
Solid tumors

M2698 – p70S6K & Akt inhibitor
Solid tumors

M3814 – DNA-PK inhibitor
Solid tumors

M9831 (VX-984) – DNA-PK inhibitor
Solid tumors

Beigene-283 – BRAF inhibitor
Solid tumors

M7583 – BTK inhibitor
Hematological malignancies

M6620[7] (VX-970) – ATR inhibitor
Solid tumors

M4344 (VX-803) – ATR inhibitor
Solid tumors

Avelumab – Anti-PD-L1 mAb
Solid tumors

Avelumab – Anti-PD-L1 mAb
Hematological malignancies

M9241 (NHS-IL12)
Cancer immunotherapy
Solid tumors

M7824 - Bifunctional immunotherapy
Solid tumors

M1095 (ALX-0761)
Anti-IL-17 A/F nanobody
Psoriasis

Phase II

Tepotinib
c-Met kinase inhibitor
Non-small cell lung cancer

Tepotinib
c-Met kinase inhibitor
Hepatocellular cancer

Avelumab – Anti-PD-L1 mAb
Merkel cell carcinoma 1L[1]

Sprifermin
Fibroblast growth factor 18
Osteoarthritis

Atacicept
Anti-Blys/anti-APRIL fusion protein
Systemic lupus erythematosus

M2951
BTK inhibitor
Rheumatoid arthritis

M2951
BTK inhibitor
Systemic lupus erythematosus

Abituzumab
anti-CD 51 mAb
Systemic sclerosis with interstitial lung disease

Phase III

Avelumab – Anti-PD-L1 mAb
Non-small cell lung cancer 1L[1]

Avelumab – Anti-PD-L1 mAb
Non-small cell lung cancer 2L[2]

Avelumab – Anti-PD-L1 mAb
Gastric cancer 1L[1]

Avelumab – Anti-PD-L1 mAb
Gastric cancer 3L[3]

Avelumab – Anti-PD-L1 mAb
Urothelial cancer 1L[1]

Avelumab – Anti-PD-L1 mAb
Ovarian cancer platinum resistant/refractory

Avelumab – Anti-PD-L1 mAb
Ovarian cancer 1L[1]

Avelumab - Anti-PD-L1 mAb
Renal cell cancer 1L[1]

Avelumab - Anti-PD-L1 mAb
Locally advanced head and neck cancer

MSB11022
Proposed biosimilar of Adalimumab
Chronic plaque psoriasis

Registration

Cladribine[4] Tablets – Lymphocyte targeting agent
Relapsing-remitting multiple sclerosis

Avelumab[5] – Anti-PD-L1 mAb
Merkel cell carcinoma

Avelumab[6] – Anti-PD-L1 mAb
Urothelial cancer 2L[2]

- Neurodegenerative Diseases
- Oncology
- Immunology
- Immuno-Oncology
- Biosimilars

Pipeline as of March 1st, 2017
Pipeline products are under clinical investigation and have not been proven to be safe and effective.
There is no guarantee any product will be approved in the sought-after indication.

[1] 1st line treatment; [2] 2nd line treatment; [3] 3rd line treatment; [4] European Medicines Agency (EMA) accepted Merck's Marketing Authorization Application (MAA) in July 2016;
[5] EMA accepted Merck's MMA in July 2016 and the US Food and Drug Administration (FDA) has accepted for Priority Review the Biologics License Application (BLA);
[6] FDA accepted for Priority Review the BLA; [7] Includes expansion cohorts in non small cell lung cancer, small cell lung cancer and triple negative breast cancer

Newsflow: Upcoming pipeline catalysts

Avelumab	MCC: Expected FDA/EMA decision	H1/H2 2017
	UC: Expected FDA decision	H2 2017
Atacicept	Phase III decision	Subject to interaction with authorities
BTK inhibitor (RA)	Phase II data readout	Q2 2017
M7824 (anti PD-L1 – TGF-beta trap)	Phase I interim data	mid 2017
Cladribine tablets	Expected EMA decision	Q3 2017
Sprifermin	Phase II data readout	Q3 2017

Note: timelines are event-driven and may change; Acronyms: MCC = Merkel cell carcinoma, UC = Urothelial cancer

Life Science: Strong top-line growth and fast synergy realization

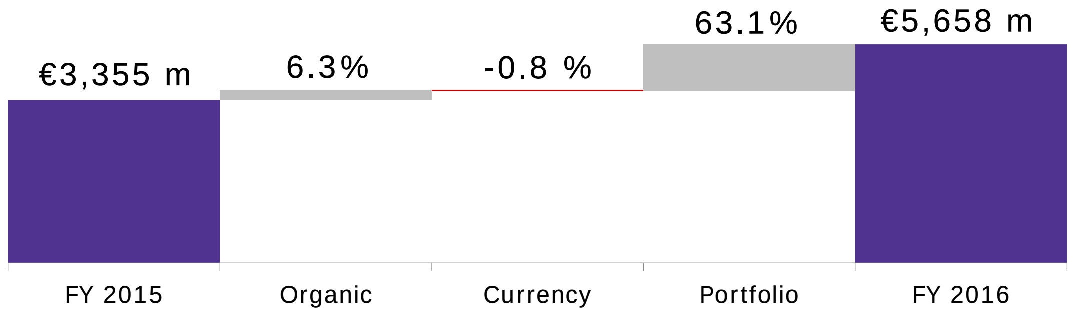
Life Science P&L

[€m]	FY 2015	FY 2016
Net sales	3,355	**5,658**
Marketing and selling	-1,038	**-1,706**
Administration	-151	**-248**
Research and development	-197	**-260**
EBIT	301	**556**
EBITDA	674	**1,378**
EBITDA pre	856	**1,652**
Margin (in % of net sales)	*25.5%*	***29.2%***

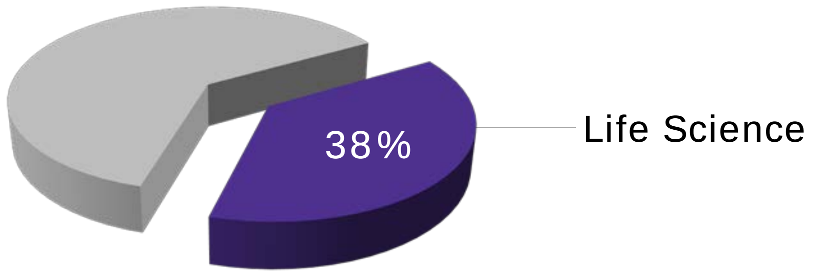
Comments

- Double-digit growth of Process Solutions driven by increasing production of large molecules across global and regional accounts
- Applied Solutions shows moderate organic growth, driven by bio-monitoring products for pharma & demand for analytical testing
- Slight organic growth of Research Solutions due to solid demand for biology portfolio
- Cost base contains Sigma, but improves in relation to sales
- Profitability jump reflects Sigma, business mix as well as uptake of synergies

Net sales bridge



FY 2016 share of group net sales



Totals may not add up due to rounding

Performance Materials: Healthy profitability amid display supply chain destocking

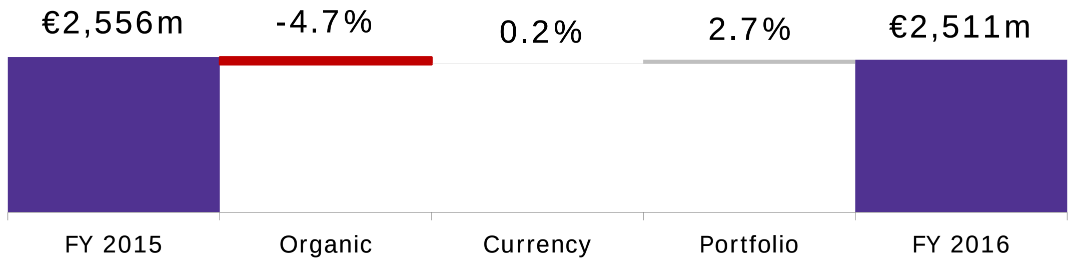
Performance Materials P&L

[€m]	FY 2015	FY 2016
Net sales	2,556	**2,511**
Marketing and selling	-208	**-233**
Administration	-63	**-61**
Research and development	-197	**-213**
EBIT	878	**823**
EBITDA	1,120	**1,077**
EBITDA pre	1,132	**1,106**
Margin (in % of net sales)	*44.3%*	***44.1%***

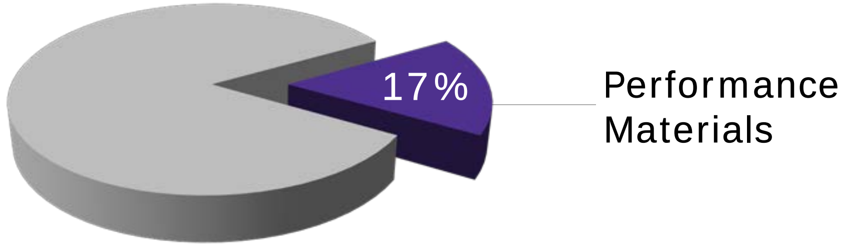
Comments

- LC impacted by volume declines of mature TN-TFT and inventory correction in supply chain linked with slight market share normalization
- OLED continues to grow on industry capacity expansion & investments
- Integrated Circuit Materials (ICM) shows good growth in all major product categories driven by increasing complexity of chips
- Pigments & Functionals post solid growth esp. due to decorative coatings
- Marketing & selling reflects contribution from Sigma's SAFC Hitech
- Healthy profitability due to leading market position with highly differentiated products, despite destocking in display supply chain

Net sales bridge



FY 2016 share of group net sales



Totals may not add up due to rounding

Healthy operating cash flow reflects strong business performance

FY 2016 – cash flow statement

[€m]	FY 2015	FY 2016	Δ
Profit after tax	1,124	**1,633**	509
D&A	1,511	**1,934**	423
Changes in provisions	215	**-51**	-266
Changes in other assets/liabilities	-636	**-587**	49
Other operating activities	-11	**-437**	-426
Changes in net working capital	-8	**26**	34
Operating cash flow	2,195	**2,518**	323
Investing cash flow	-11,936	**-503**	11,433
thereof Capex on PPE	-514	**-716**	-202
Financing cash flow	7,164	**-1,908**	-9,072

Cash flow drivers

- Profit after tax includes gain from Kuvan divestment, which is neutralized in other operating activities
- D&A increases mainly due to Sigma
- Changes in provisions mainly reflect provision for evofosfamide in 2015
- Investing cash flow contains increased Capex & BioControl; LY is mainly Sigma purchase
- Financing cash flow reflects repayments of Sigma-related debt; LY contains € and US$ bond issuances

Totals may not add up due to rounding

Exceptionals in Q4 2016

Exceptionals in EBIT

[€m]	Q4 2015		Q4 2016	
	Exceptionals	thereof D&A	Exceptionals	thereof D&A
Healthcare	90	89	20	0
Life Science	111	1	93	27
Performance Materials	6	0	25	16
Corporate & Other	13	0	27	1
Total	220	89	165	44

Totals may not add up due to rounding

Exceptionals in FY 2016

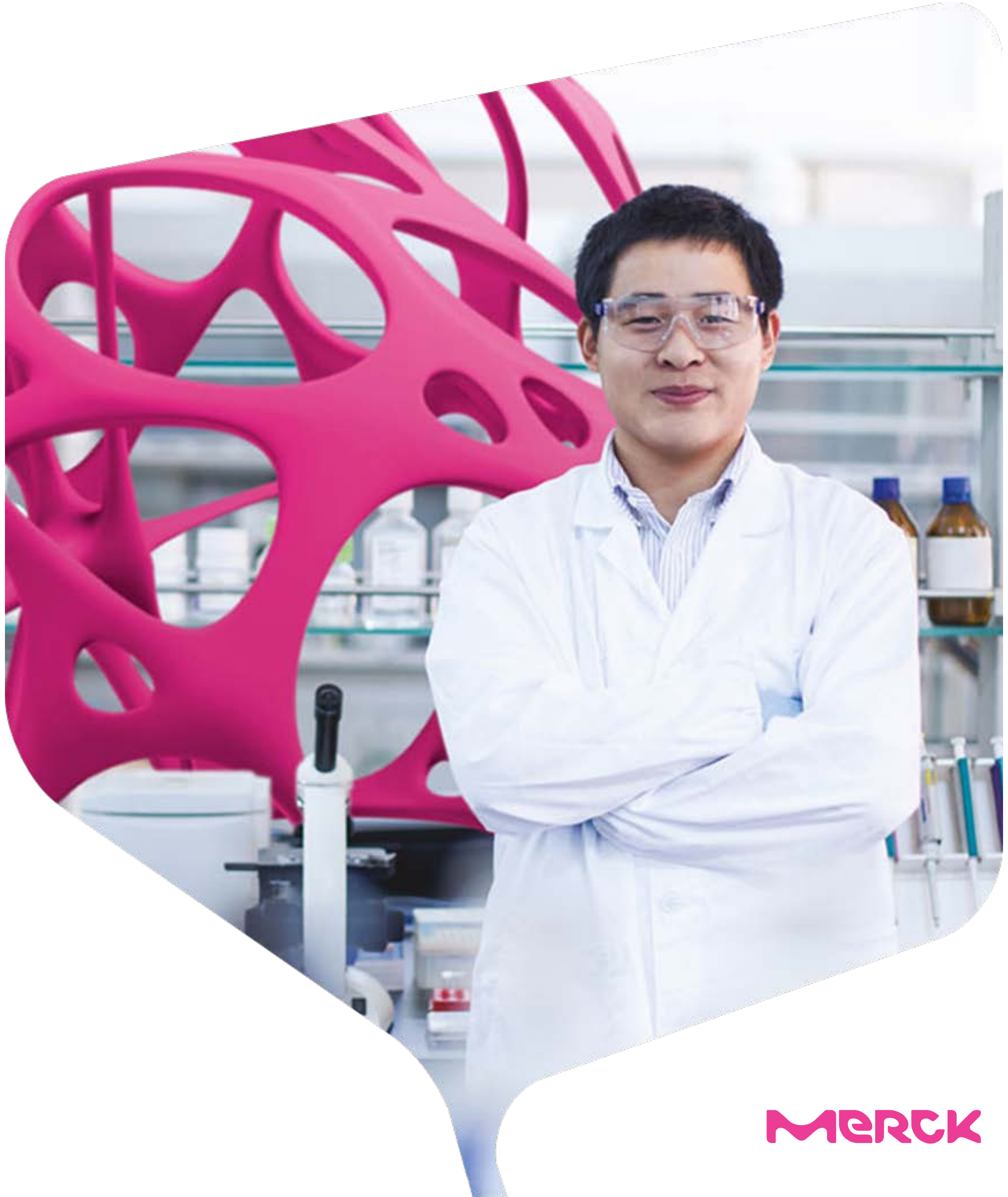
Exceptionals in EBIT

[€m]	FY 2015		FY 2016	
	Exceptionals	thereof D&A	Exceptionals	thereof D&A
Healthcare	122	90	-225	71
Life Science	182	1	301	27
Performance Materials	12	0	46	16
Corporate & Other	51	1	69	1
Total	367	92	191	115

Totals may not add up due to rounding

Financial calendar

Date	Event
April 28, 2017	Annual General Meeting
May 18, 2017	Q1 2017 Earnings release
August 3, 2017	Q2 2017 Earnings release
November 9, 2017	Q3 2017 Earnings release



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