



BRYAN, GARNIER & CO

MARKET UPDATE

HEALTHCARE



November 2017



HIGHLIGHTS

Dear Reader,

This past month, the gene editing arena has been quite effervescent!

Starting with Bayer's deal with Curevac through Casebia Therapeutics (Bayer-CRISPR Therapeutics joint venture) to develop novel Cas9 mRNA constructs with improved properties for *in vivo* gene-editing liver disease programs. CRISPR-Cas9 has generated a lot of excitement for its use in eliminating disease-causing irregularities in DNA, but other approaches are also explored by scientists.

Novartis renewed its commitment to gene and cell therapies beyond CART & CRISPR by signing a deal with upfront payment and equity investment with Homology Medicines to use its AMEnDR gene-editing technology. The resulting drugs aim for certain ophthalmic and hemoglobinopathy diseases. Lastly Locus Biosciences, armed with \$19m in series A funding, is also moving ahead with a first clinical trial for its CRISPR-based antimicrobial drugs. Locus is the only company using a CRISPR-Cas3 system to tackle multidrug-resistant bacteria, while preserving the rest of the microbiome. On the academic side, the MIT has developed nanoparticles that could eliminate the need for viruses to edit genes. All these advances are very interesting and a promise to keep partnerships well going in the future.

On the public market front, biotech listings on Nasdaq remain strong this month. Denali Therapeutics and Odonate Therapeutics contemplate using the Wall Street's bullish sentiment momentum by filing for two big IPOs. Denali Therapeutics has been founded back in 2015 on a monster \$217 million A round followed up with a \$130 million series B, by a group of high-profile ex-Genentech executives, who held various positions in neuroscience department. The company focuses on neurodegenerative diseases like Alzheimer's disease, Parkinson's disease and ALS. Today it is looking for \$100 million. For its part, Odonate Therapeutics the San Diego-based biotech founded in 2013, envisions pocketing \$173 million for its work on oral chemotherapy drugs.

Last but not least, we are happy that with 24 companies and c. 100 attendees, the Bryan, Garnier & Co. Healthcare conference was, this year again, a great success! We look forward to meeting with you all again in November 2018 for our 6th edition. Thank you!

HERVE RONIN
Partner | Bryan, Garnier & Co

+6.5%
5Y-CAGR
Worldwide
prescription drugs -
expected sales

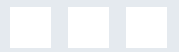
+5.3%
5Y-CAGR
Medtech market -
expected growth

-0.4% / -7.5%
Monthly EU Pharma &
biotech performance

30 / \$3.6bn
Number & total value
of US ECM deals
priced in November

**New record
high session
on Wall
Street**

Investors reacted to a
better-than-expected
tech stocks quarterly
earnings releases



NOVEMBER AT A GLANCE — FOCUS ON EUROPE

EQUITY MARKETS

- Overall, US healthcare equities showed steady performances while European biotechs plummeted. US and European volatility indexes increased by 11% and 12%, respectively:
- Monthly US / EU Biotech perf.: 0.5% / -7.5%
- Monthly US / EU Pharma perf.: 1.7% / -0.4%

INDUSTRY & SCIENCE

- News of the month: the US-FDA approved Nicox's Vyzulta (latanoprostene bunod) for the treatment of glaucoma and ocular hypertension
- Vyzulta's regulatory approval by the US authorities has not been uneventful, but Nicox and its partner Bausch+Lomb finally got the green light from the FDA. Vyzulta's launch in the US is expected by the end of the year

FINANCING

- Raise of the month: Biocartis (oncology IVD) successfully raised €80m on the market, to expand its Idylla platform, and accelerate its sales and marketing activities
- On the private front, Xeltis, a clinical-stage medical device company pioneering a restorative approach in heart valve therapy, closed an oversubscribed €45m series C round of financing, the largest investment round for a European private Medtech company in 2017

M&A

- There were no major deals in Europe this month, as M&A activity pauses for breath
- Palatine-backed Vernacare, a company specialized in infection protection, acquired Synergy Health from US medical device company Steris. Synergy Health manufactures wound care and surgery products, as well as hygiene wipes. This acquisition will broaden Vernacare's range of products

NEXT MONTH

- Indian company Intas Pharmaceuticals, to acquire UK-based Mallinckrodt's generic business in the US for \$1.5bn
- Conference & Events: the 59th annual ASH meeting will be held in December (12/9-12), the biggest conference for hematology diseases including malignant disorders. In the scientific spotlight session, emerging genomic tools for inherited hematologic diseases, and the impact of the microbiome on the hematologic system

CAR-T: NO LONGER SCIENCE FICTION

BRYAN, GARNIER & CO

INDEPENDENT RESEARCH

Healthcare

8th November 2017

CAR-T: no longer Science Fiction

Healthcare

COLLECTIS	NEUTRAL	FV EUR23
Recurring coverage		
BUY	FV EUR999	Reuters
Price	EUR24.41	High/Low
Market cap.	29.61/14.99	Enterprise Val
PE (2017e)	EUR646m	EWIGBIT (2017e) NS
Transferring coverage		
BUY	FV EUR51	Reuters
Price	EUR38.903	High/Low
Market Cap.	54.05/14.905	Enterprise Val
PE (2017e)	EUR417m	EWIGBIT (2017e) z
NS		
NOVARTIS	BUY	FV CHF82
Bloomberg	NOVN.VX	Reuters
Price	CHF82.3	High/Low
Market Cap.	CHF215,266m	Enterprise Val
PE (2017e)	17.2x	EWIGBIT (2017e) 16.7x

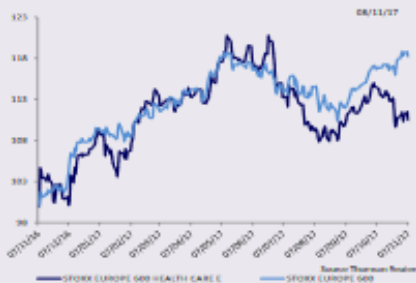
CAR-T therapies have demonstrated some of the highest cure rates in history for late-stage cancer patients. However, they are plagued with controversy because of their early toxicity profile, manufacturing and cost. Hopefully, technology is evolving fast and safety protocols are reducing mortality. We see the next 12 months as data rich and believe investor confidence in this market will increase. Our take is that 2018 will lead to considerably more colour on the improved efficacy and safety of CAR-T. The first two CAR-T cell therapies, namely Novartis' Kymriah and Kite's Yescarta, have been approved for the treatment of ALL and DLBCL respectively, paving the way for additional new entrants. 2018 may be a good entry point for two further CAR-T approvals in DLBCL, such as Novartis' CTL019 and Juno's JCAR017. We are re-initiating Collectis and Celyad.

- Tumours use many strategies to evade the host immune response, including downregulation or weak immunogenicity of target antigens and creation of an immune-suppressive tumour environment. T-cells play a key role in cell-mediated immunity and, recently, strategies to genetically modify T-cells either through altering the T cell receptor (TCR) specificity or through introducing antibody-like recognition in chimeric antigen receptors (CARs) have made substantial advances. As we believe TCRs are 1/riskier owing to fatal off-target toxicities and 2/too early stage compared with CAR-T, we focused this report on CAR-T cell therapy. After years of raising cash, IPOs, securing licensing rights from academia and starting numerous small studies, the race is on to generate hard clinical data. Moreover the sector has not been sitting on its hands as subsequent technical advances have been investigated to address some current challenges.

- T cells engineered to express CARs by gene transfer technology specifically recognize their target antigen in a simplified manner (antibody scFv-based, MHC independent), resulting in T cell activation. Starting with today's murine containing scFv containing products, future CAR products should feature fully human scFv, optimized to particular T-cell subsets, suicide/control switches and logic gates as well as an armamentarium of strategies that allow T cells to thrive in a hostile tumour environment. Autologous T-cells are the cornerstone of present cell-based cancer immunotherapies, but allogeneic cell sources, possibly including stem cell-derived "off-the-shelf" T-cells, are likely to play an important role in the future.

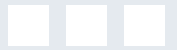
- Collectis – NEUTRAL FV EUR23: Seems affected by several issues: 1/UCART19 clinical program is progressing slowly and demonstrated disappointed preliminary clinical results; 2/ CD123 might be a dangerous target to use for CAR-T cell therapy; 3/GMP manufacturing problems might explain in part the delays that the company accumulates; 4/Other pre-clinical projects focus on Multiple Myeloma, which in our view is not a strategic indication to address, and these CAR-T product candidates are still too early stage to be included in our valuation model; 5/Lack of clinical data in 2018.

- Celyad – BUY FV EUR58: Seems to have everything it takes to succeed.1/Celyad has a very differentiated approach with its autologous NKG2D CART, addressing both liquid (AML), and solid (colorectal) cancers; 2/Celyad is developing both autologous and allogeneic CAR-T cell therapies; 3/Despite its earlier development stage, Celyad has a robust patent estate validated by two structuring deals related to its allogeneic platform. Also, this robust allogeneic IP could be leveraged with further licensing agreements with CAR-T players interested in developing allogeneic CAR-T product candidates; 4/Has its own manufacturing infrastructure.



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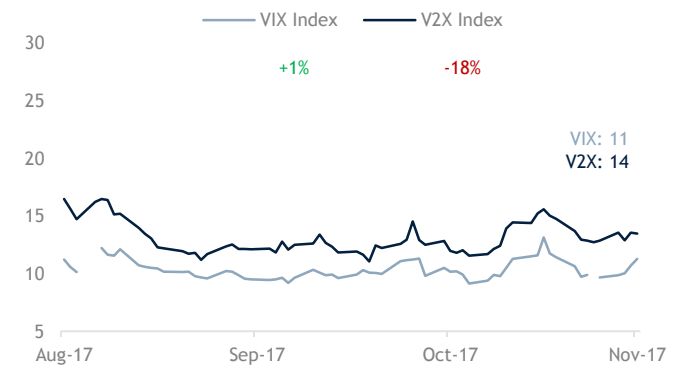
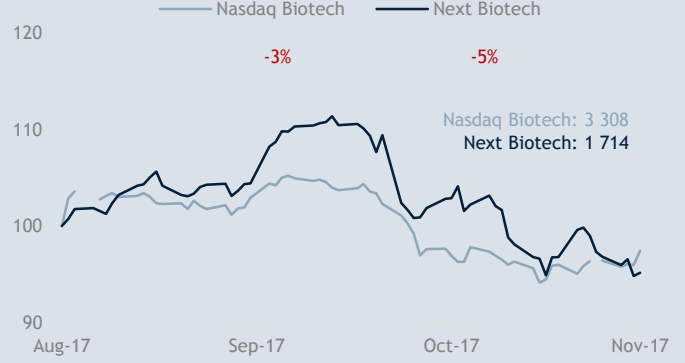
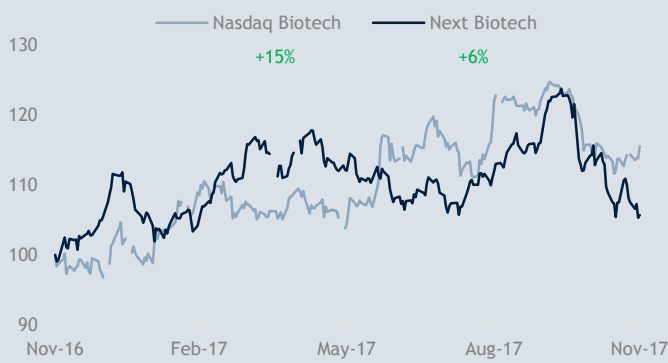
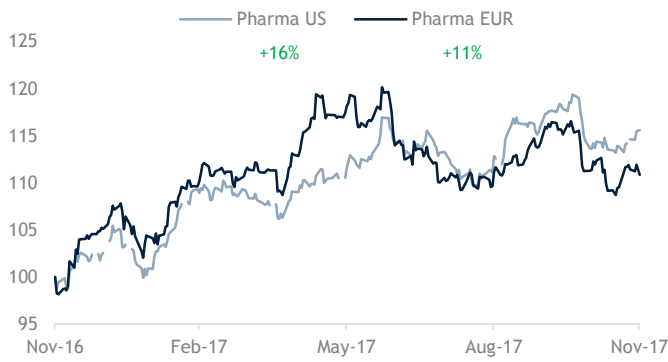
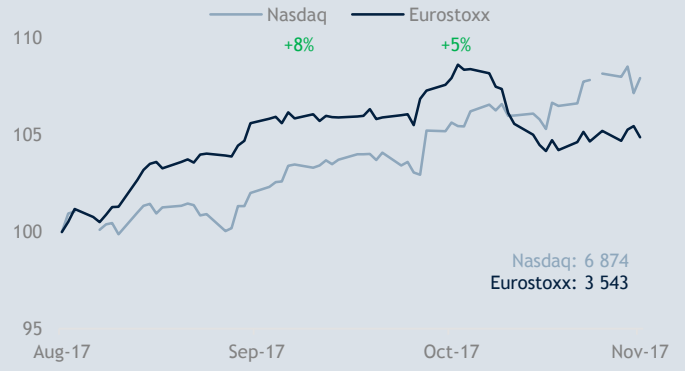
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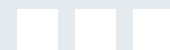


EQUITY MARKETS


1-YEAR PERFORMANCE


3-MONTH PERFORMANCE

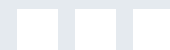




EURONEXT HEALTHCARE COMPANY PERFORMANCE


Pharmaceuticals 			Performance	
Company	Exchange	Mkt Cap (€m)	YTD	1 Month
SANOFI	EN Paris	96 112	2.2%	-5.5%
UCB SA	EN Brussels	12 586	7.9%	4.1%
IPSEN	EN Paris	8 641	51.4%	-1.5%
BOIRON SA	EN Paris	1 471	-8.4%	-2.2%
VIRBAC SA	EN Paris	918	-35.1%	-4.2%
FAGRON	EN Brussels	792	13.6%	-0.6%
STALLERGENES GRE	EN Paris	778	27.2%	-11.6%
VETOQUINOL SA	EN Paris	650	21.2%	-2.0%

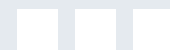
Biotechs 			Performance	
Company	Exchange	Mkt Cap (€m)	YTD	1 Month
GALAPAGOS NV	EN Amsterdam	3 772	21.5%	-14.5%
ABLYNX NV	EN Brussels	1 463	81.0%	10.6%
DBV TECHNOLOGIES	EN Paris	938	-43.4%	-8.7%
CELLECTIS	EN Paris	735	27.9%	-22.9%
ARGENX SE	EN Brussels	720	67.8%	33.9%
GENFIT	EN Paris	716	9.3%	1.3%
PHARMING GRP NV	EN Amsterdam	679	484.3%	25.9%
ERYTECH PHARMA	EN Paris	428	73.5%	-4.6%
MITHRA PHARM	EN Brussels	372	20.0%	-1.9%
AB SCIENCE SA	EN Paris	361	-35.6%	-3.2%
CELYAD	EN Brussels	356	102.7%	-28.3%
NICOX SA	EN Paris	301	19.7%	15.0%
INNATE PHARMA SA	EN Paris	278	-66.8%	-48.2%
NANOBIOTIX	EN Paris	273	-9.9%	-10.1%
TIGENIX NV	EN Brussels	259	33.6%	-3.2%
VALNEVA SE	EN Paris	229	-5.8%	5.1%
TRANSGENE SA	EN Paris	170	2.2%	-17.5%
THROMBOGENICS NV	EN Brussels	164	79.6%	0.8%
POXEL SA	EN Paris	157	-1.6%	-2.7%
KIADIS PHARM	EN Amsterdam	135	-7.5%	-2.9%
GENSIGHT	EN Paris	124	-33.9%	-1.2%
ADOCIA SAS	EN Paris	103	-75.3%	-6.6%
PROBIODRUG AG	EN Amsterdam	98	-33.4%	-12.1%
ABIVAX SA	EN Paris	97	55.9%	-16.8%
INVENTIVA SA	EN Paris	97	n.a	-10.1%
PHARNEXT SA	EN Paris	94	-5.7%	-10.1%
GENEURO SA	EN Paris	85	-43.1%	-13.3%
ONCODESIGN	EN Paris	80	-17.6%	3.2%
BONE THERAPEUTIC	EN Brussels	64	20.7%	-6.0%
BIOPHYTIS	EN Paris	58	11.1%	-18.8%
ONXEO	EN Paris	56	-56.0%	-22.0%
ASIT BIOTECH SA	EN Brussels	53	-35.5%	25.6%
OSE IMMUNO	EN Paris	52	-48.9%	-12.8%
LYSOGENE SA	EN Paris	50	n.a	-15.0%
THERANEXUS SADIR	EN Paris	47	n.a	n.a
CERENIS THERAPEU	EN Paris	35	-77.7%	-8.1%
NEOVACS	EN Paris	34	-32.1%	3.8%
QUANTUM GEN-REGR	EN Paris	33	-59.4%	-9.7%
TXCELL	EN Paris	31	-39.7%	-6.4%
VALBIOTIS SAS	EN Paris	25	n.a	-7.5%
SENSORION SA	EN Paris	23	-39.9%	-31.7%
PLANT ADVANCED	EN Paris	23	31.5%	1.4%
HYBRIGENICS	EN Paris	22	-42.8%	-16.1%
INTEGRAGEN	EN Paris	17	-22.4%	-1.9%
GENOWAY SA	EN Paris	11	5.6%	3.8%
ESPERITE	EN Amsterdam	10	-58.8%	8.9%




EURONEXT HEALTHCARE COMPANY PERFORMANCE


Medical Products & Devices 			Performance	
Company	Exchange	Mkt Cap (€m)	YTD	1 Month
EUROFINS SCIEN	EN Paris	9 046	27.4%	-3.9%
BIOMERIEUX	EN Paris	8 275	48.6%	3.3%
SARTORIUS STEDIM	EN Paris	5 523	0.6%	2.3%
GUERBET	EN Paris	892	1.0%	-8.4%
ION BEAM APPLICA	EN Brussels	718	-42.2%	-6.8%
BIOCARTIS NV	EN Brussels	638	14.0%	-2.7%
MDXHEALTH	EN Brussels	189	-20.8%	-20.5%
AMPLITUDE SURGIC	EN Paris	179	0.0%	-9.9%
CARMAT	EN Paris	173	-5.2%	8.7%
VEVIM SA	EN Paris	163	114.2%	-0.2%
BIOM'UP SACA	EN Paris	112	n.a	n.a
MEDIAN TECHNOLOG	EN Paris	111	-14.6%	-8.3%
EOS IMAGING SA	EN Paris	109	16.7%	-1.0%
QUANTEL	EN Paris	101	97.5%	0.0%
MAUNA KEA TECHNO	EN Paris	99	56.0%	-7.6%
CURETIS AG	EN Amsterdam	62	-38.5%	-19.2%
CELLNOVO GROUP S	EN Paris	49	-59.4%	-21.1%
SUPERSONIC	EN Paris	45	-6.5%	5.4%
DIAXONHIT	EN Paris	45	-25.0%	-9.4%
I CERAM	EN Paris	41	14.9%	10.2%
MEDICREA INTERNA	EN Paris	41	-40.7%	-20.0%
CROSSJECT	EN Paris	40	0.2%	12.2%
BIOCORP	EN Paris	37	8.5%	3.5%
PIXIUM VISIO	EN Paris	36	-56.6%	-11.7%
BIOSYNEX	EN Paris	33	61.5%	-1.1%
STENTYS	EN Paris	31	-31.9%	-4.9%
THERACLION	EN Paris	30	-23.5%	-6.5%
DMS	EN Paris	27	-17.3%	-5.1%
VISIOMED GROUP	EN Paris	26	-50.7%	-15.2%
BLUELINEA	EN Paris	25	4.4%	3.1%
EUROMEDIS GROUPE	EN Paris	25	18.4%	-2.4%
NOVACYT	EN Paris	24	-42.9%	-5.9%
THERADIAG	EN Paris	22	-32.9%	3.7%
SPINEGUARD	EN Paris	20	-22.6%	-11.6%
GENOMIC VIS	EN Paris	18	-26.3%	15.4%
SPINWAY	EN Paris	15	19.4%	-11.2%
IMPLANET	EN Paris	14	-37.5%	-15.3%
SAFE ORTHOPAEDIC	EN Paris	13	-51.4%	-6.9%

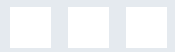
Healthcare Services 			Performance	
Company	Exchange	Mkt Cap (€m)	YTD	1 Month
ESSILOR INTL	EN Paris	23 636	1.9%	0.4%
ORPEA	EN Paris	6 542	33.4%	-0.9%
KORIAN	EN Paris	2 362	6.9%	6.0%
RAMSAY GENERALE	EN Paris	1 147	-4.1%	-2.1%
LNA SANTE	EN Paris	563	64.7%	-3.9%
BASTIDE	EN Paris	330	89.4%	-1.3%




LONDON HEALTHCARE COMPANY PERFORMANCE


Pharmaceuticals 			Performance	
Company	Exchange	Mkt Cap (£m)	YTD	1 Month
GLAXOSMITHKLINE	London	63 574	-12.8%	-3.0%
ASTRAZENECA PLC	London	60 044	12.2%	-8.0%
SHIRE PLC	London	33 061	-21.9%	-0.6%
HUTCHISON CHINA	London	3 383	124.3%	10.1%
INDIVIOR PLC	London	2 898	35.6%	0.3%
BTG PLC	London	2 790	22.4%	-4.0%
HIKMA PHARMACEUT	London	2 476	-44.8%	-10.1%
DECHRA PHARMA	London	2 021	62.6%	3.0%
ABCAM PLC	London	1 980	27.5%	-4.9%
VECTURA GROUP	London	677	-27.2%	0.2%

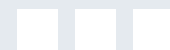
Biotechs 			Performance	
Company	Exchange	Mkt Cap (£m)	YTD	1 Month
ECO ANIMAL HEALT	London	391	19.3%	0.0%
OXFORD BIOMEDICA	London	281	122.1%	-2.2%
CIRCASSIA PH	London	310	-1.1%	9.7%
ALLIANCE PHARMA	London	282	27.6%	0.0%
FARON PHARMACEUT	London	244	216.0%	0.3%
4D PHARMA PLC	London	221	-52.1%	-7.5%
BENCHMARK HOLDIN	London	266	-38.6%	12.1%
MEREO BIOPHARMA	London	228	19.6%	-2.3%
ALLERGY THERAPEU	London	169	36.5%	-15.2%
VERSEON CORP	London	189	-21.4%	-1.2%
TIZIANA LIFE SCI	London	195	-18.2%	5.4%
SHIELD THERAPEUT	London	137	-31.8%	-25.1%
SILENCE THERAPEU	London	138	97.0%	-10.5%
SINCLAIR PHARMA	London	138	-18.9%	-4.8%
VERONA PHARMA PL	London	115	-29.9%	-17.4%
IMMUPHARMA PLC	London	166	140.4%	30.9%
BIOVENTIX PLC	London	136	104.1%	10.4%
MAXCYTE INC	London	103	74.5%	0.0%
SUMMIT THERAPEUT	London	127	25.4%	16.1%
MOTIF BIO PLC	London	88	35.4%	-17.3%
TISSUE REGENIX G	London	84	-64.6%	-15.9%
DIURNAL GROUP PL	London	75	33.8%	1.1%
VERNALIS PLC	London	68	-61.8%	4.0%
ONCIMMUNE HOLDIN	London	68	-6.8%	1.7%
RENEURON GROUP P	London	60	-27.6%	-2.6%
AMRYT PHARMA PLC	London	59	10.9%	12.3%
SCANCELL HOLDING	London	38	-16.9%	-5.8%
C4X DISCOVERY HO	London	37	-17.3%	0.6%
CATHAY INTL HLDG	London	31	-56.2%	-14.7%
FUTURA MEDICAL	London	31	-53.8%	-11.9%
MIDATECH PHARMA	London	27	-62.5%	-11.1%
SAREUM HOLDINGS	London	23	13.3%	-10.5%
OXFORD PHARMASCI	London	18	-6.3%	22.9%
SKINBIOTHERAPEUT	London	13	n.a	4.9%



LONDON HEALTHCARE COMPANY PERFORMANCE

Medical Products & Devices 			Performance	
Company	Exchange	Mkt Cap (£m)	YTD	1 Month
SMITH & NEPHEW	London	11 362	8.4%	-5.7%
CONVATEC GROUP P	London	3 818	-16.0%	2.0%
ADVANCED MEDICAL	London	667	41.9%	-8.6%
CONSORT MEDICAL	London	559	9.1%	1.3%
MEDICA GROUP PLC	London	237	n.a	-7.4%
TRISTEL PLC	London	121	84.2%	3.8%
EKF DIAGNOSTICS	London	120	53.3%	2.9%
IMMUNODIAGNOSTIC	London	79	29.1%	-3.6%
BIOQUELL PLC	London	58	83.9%	5.8%
CREO MEDICAL GRO	London	56	-14.7%	-12.0%
NETSCIENTIFIC PL	London	46	2.3%	22.9%
AVACTA GROUP PLC	London	44	-9.7%	-3.3%

Healthcare Services 			Performance	
Company	Exchange	Mkt Cap (£m)	YTD	1 Month
CLINIGEN GROUP P	London	1 229	42.3%	-13.3%
OXFORD BIODYNAMI	London	178	36.6%	-15.5%
ANPARIO PLC	London	96	46.8%	-3.6%
ERGOMED PLC	London	82	25.6%	-8.8%
ABZENA PLC	London	68	-11.8%	11.4%
HVIVO PLC	London	43	-67.1%	0.0%



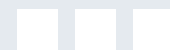
GERMAN HEALTHCARE COMPANY PERFORMANCE

Pharmaceuticals			Performance	
Company	Exchange	Mkt Cap (€m)	YTD	1 Month
BAYER AG-REG	Xetra	87 863	9.7%	-7.3%
MERCK KGAA	Xetra	38 734	-9.1%	-4.0%
BIOTEST AG	Xetra	818	34.4%	-13.3%
MEDIGENE AG	Xetra	248	-6.5%	-13.0%
ECKERT & ZIEGLER	Xetra	205	47.9%	7.2%
MAGFORCE AG	Xetra	171	42.9%	-13.3%
CO.DON AG	Xetra	158	199.0%	-5.6%
BIOFRONTERA AG	Xetra	155	27.6%	11.1%
HAEMATO AG	Xetra	108	-15.7%	-10.3%
SANOCHEMIA PHARM	Xetra	19	11.0%	-4.8%

Biotechs			Performance	
Company	Exchange	Mkt Cap (€m)	YTD	1 Month
MORPHOSYS AG	Xetra	2 310	61.0%	2.8%
EVOTEC AG	Xetra	1 830	66.7%	-26.1%
FORMYCON AG	Xetra	277	27.7%	-8.3%
4SC AG	Xetra	150	102.9%	0.2%
PAION AG	Xetra	148	-0.3%	-12.5%
MOLOGEN AG	Xetra	88	69.1%	-10.6%
HEIDELBERG PHARM	Xetra	61	21.9%	-13.0%
ELANIX BIOTECHNO	Xetra	25	-18.4%	-10.8%
CYTOTOOLS AG	Xetra	21	20.0%	-14.1%
BIOSILU HEALTHCA	Munich	6	-47.1%	-39.2%

Medical Products & Devices			Performance	
Company	Exchange	Mkt Cap (€m)	YTD	1 Month
FRESENIUS SE & C	Xetra	33 574	-17.8%	-14.8%
FRESENIUS MEDICA	Xetra	25 367	3.5%	-1.1%
SARTORIUS AG	Xetra	5 768	4.9%	-3.8%
CARL ZEISS ME-BR	Xetra	4 427	42.7%	7.5%
DRAEGERWERK-PREF	Xetra	1 120	-11.7%	-28.4%
STRATEC BIOMEDIC	Xetra	824	52.9%	5.5%
PULSION MED SY-R	Munich	210	12.3%	2.0%
EPIGENOMICS AG	Xetra	97	-11.3%	-3.7%
GERATHERM MEDICA	Xetra	62	10.5%	-3.5%
HUMANOPTICS AG	Frankfurt	50	167.4%	36.3%
AAP IMPLANTATE	Xetra	46	32.0%	-14.2%
CURASAN AG	Xetra	19	17.9%	1.7%

Healthcare Services			Performance	
Company	Exchange	Mkt Cap (€m)	YTD	1 Month
RHOEN-KLINIKUM	Xetra	1 947	14.8%	-1.8%
MEDICLIN AG	Xetra	304	9.6%	11.6%
M1 KLINIKEN AG	Frankfurt	195	15.9%	5.1%
MATERNUS-KLINIKE	Xetra	48	80.5%	4.6%
VITA 34 AG	Xetra	39	80.5%	-16.2%
EIFEL-KLINIK AG	Frankfurt	16	-3.1%	0.4%



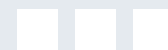
SWISS HEALTHCARE COMPANY PERFORMANCE

Pharmaceuticals →			Performance	
Company	Exchange	Mkt Cap (€m)	YTD	1 Month
NOVARTIS AG-REG	SIX Swiss Ex	220 338	17.7%	0.8%
ROCHE HLDG-GENUS	SIX Swiss Ex	213 229	9.6%	6.6%
VIFOR PHARMA AG	SIX Swiss Ex	8 028	9.3%	-4.3%
COSMO PHARMACEUT	SIX Swiss Ex	2 119	-15.9%	-0.4%
CASSIOPEA SPA	SIX Swiss Ex	340	15.6%	-2.0%

Biotechs ↘			Performance	
Company	Exchange	Mkt Cap (€m)	YTD	1 Month
IDORSIA LTD	SIX Swiss Ex	2 561	n.a	7.0%
BASILEA PHAR-REG	SIX Swiss Ex	909	4.7%	-5.1%
MOLECULAR PARTNE	SIX Swiss Ex	526	0.8%	-10.7%
EVOLVA HOLDING S	SIX Swiss Ex	247	-47.7%	-3.0%
NEWRON PHARMACEU	SIX Swiss Ex	206	-42.7%	-14.8%
SANTHERA PHA-REG	SIX Swiss Ex	187	-44.0%	-12.0%
KUROS BIOSCIENCE	SIX Swiss Ex	104	-36.4%	-5.6%
ADDEX THERAPEUTI	SIX Swiss Ex	33	16.8%	-6.1%
RELIEF THERAPEUT	SIX Swiss Ex	20	-66.7%	0.0%

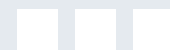
Medical Products & Devices ↘			Performance	
Company	Exchange	Mkt Cap (€m)	YTD	1 Month
STRAUMANN HLDG-R	SIX Swiss Ex	11 520	84.2%	4.7%
SONOVA HOLDING A	SIX Swiss Ex	10 211	28.5%	-12.3%
TECAN GROUP AG-R	SIX Swiss Ex	2 361	28.8%	-4.5%
YPSOMED HOLD-REG	SIX Swiss Ex	2 109	-9.3%	-4.7%
IVF HARTMANN-REG	SIX Swiss Ex	432	-10.2%	-2.4%
COLTENE HOLD-REG	SIX Swiss Ex	400	32.3%	-4.7%
LIFEWATCH AG-REG	SIX Swiss Ex	314	65.9%	19.3%
SHL TELEMEDI-REG	SIX Swiss Ex	75	1.0%	-8.3%

Healthcare Services →			Performance	
Company	Exchange	Mkt Cap (€m)	YTD	1 Month
LONZA GROUP -REG	SIX Swiss Ex	19 019	58.5%	-3.5%
BACHEM HOL-REG B	SIX Swiss Ex	1 850	53.8%	8.0%
DOTTIKON ES H-RE	SIX Swiss Ex	1 012	85.1%	0.1%



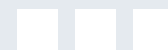
KEY SECTOR NEWS IN NOVEMBER

DATE	NEWS
30 Nov 17	GENMAB - Dara, a new string to its bow
29 Nov 17	MERCK KGAA - Bavencio fails 3L Gastric, potential marginally impacted
29 Nov 17	Optical & Eyewear Sector - EssilorLuxottica: proposed combination approved in Canada
27 Nov 17	GENMAB - Darzalex enters the blockbuster league
23 Nov 17	INNATE PHARMA - Lirilumab/Opdivo lost its head & neck
22 Nov 17	GENMAB - Dara is gaining the first line in MM
22 Nov 17	ABLYNX - Capla phill accepted for late breaking presentation at ASH: a key driver to penetration
22 Nov 17	NOVO NORDISK - Semaglutide more than central for the investment case
20 Nov 17	DBV TECHNOLOGIES - Confirmed safety profile should offer some relief
20 Nov 17	ROCHE - HEAVEN-3 and IMpower150 both positive
20 Nov 17	BIOM'UP - To bleed or not to bleed
17 Nov 17	ROCHE - ACE910 approved in the US as Hemlibra for HemA with inhibitors
15 Nov 17	GENMAB - USD25m milestone received as a result of first sales of Dara in Japan
15 Nov 17	ASTRAZENECA - Fasenna (benralizumab) approved in the US
15 Nov 17	BAYER - Bayer acquires rights to new oncology drug to be launched next year
14 Nov 17	QIAGEN - Guidance of 2,000 cumulative QIAsymphony placed exceeded
10 Nov 17	TRANSGENE - Successful capital increase, EUR14.4m raised
10 Nov 17	SANOFI - Sanofi licenses-in a BTK inhibitor in MS
9 Nov 17	ONCIMMUNE - Blood sampling made easier for lung cancer test
9 Nov 17	MERCK KGAA - Soft profitability of the LS business offset by lower corporate costs
8 Nov 17	NOVARTIS - Kisqali expands its benefit in premenopausal women with ER+ BC
8 Nov 17	CELYAD - Everything it takes to succeed?
7 Nov 17	MORPHOSYS - Q3 financial results in line with expectations
7 Nov 17	CELLECTIS - Ongoing phase I trials with UCART123 will soon resume patient enrolment
7 Nov 17	QIAGEN - In-line Q3 results and FY17 guidance maintained
3 Nov 17	NICOX - Approval of Vyzulta by the FDA
3 Nov 17	SANOFI - 2018 looks like another transition year
3 Nov 17	ZEALAND - Severe revision to our assumptions for Soliqua
2 Nov 17	NOVARTIS - CAR-T space: Competition intensifies, as expected
2 Nov 17	FRESENIUS MED CARE - Q3 results. Hurricane's impact is meaningful
2 Nov 17	FRESENIUS SE - Management sees achievement of 2018 expectations challenging for AKORN
1 Nov 17	NOVO NORDISK - Mixed picture in third-quarter and mixed guidance for 2018 too
1 Nov 17	ASTRAZENECA - Fourth growth driver in oncology now FDA-approved



EUROPEAN FUNDRAISING : IPO & FOLLOW-ONS

	Pricing Date	Issuer	Country	Industry	Size (€m)	Offer type	Offer To Date
	11/29/2017	Hansa Medical AB	SWEDEN	Medical Labs&Testing Srv	55	Follow-On	n.a.
	11/28/2017	Biocartis NV	BELGIUM	Diagnostic Equipment	80	Follow-On	0%
	11/22/2017	IRRAS AB	SWEDEN	Medical Products	30	IPO	-22%
	11/16/2017	Orphazyme A/S	DENMARK	Medical-Biomedical/Gene	81	IPO	-6%
	11/15/2017	Ambu A/S	DENMARK	Medical Instruments	91	Follow-On	-3%
	11/14/2017	ProQR Therapeutics NV	NETHERLANDS	Medical-Drugs	14	Follow-On	2%
	11/10/2017	Erytech Pharma SA	FRANCE	Medical-Biomedical/Gene	123	IPO	22%
	11/10/2017	Cambian Group PLC	BRITAIN	Medical-Outptnt/Home Med	17	Follow-On	n.a.
	11/10/2017	Transgene SA	FRANCE	Medical-Biomedical/Gene	14	Follow-On	9%
Last month	11/08/2017	InflaRx NV	GERMANY	Medical-Drugs	85	IPO	42%
	10/31/2017	Eurofins Scientific SE	LUXEMBOURG	Medical Labs&Testing Srv	299	Follow-On	-6%
	10/31/2017	Nanobiotix	FRANCE	Medical Products	27	Follow-On	0%
	10/25/2017	TheraNexus SADIR	FRANCE	Medical-Biomedical/Gene	20	IPO	-3%
	10/24/2017	Ablynx NV	BELGIUM	Medical-Biomedical/Gene	196	IPO	32%
	10/24/2017	uniQure NV	NETHERLANDS	Medical-Drugs	78	Follow-On	-17%
	10/18/2017	Akari Therapeutics PLC	BRITAIN	Medical-Drugs	15	Follow-On	-3%
	10/11/2017	Biom'Up SACA	FRANCE	Medical Products	43	IPO	-5%
	10/10/2017	Kiadis Pharma NV	NETHERLANDS	Medical-Biomedical/Gene	18	Follow-On	-2%
	10/05/2017	Faron Pharmaceuticals Oy	FINLAND	Medical-Drugs	11	Follow-On	6%
	09/27/2017	Terveystalo Oyj	FINLAND	Medical-Hospitals	877	IPO	-3%
	09/27/2017	Ascendis Pharma A/S	DENMARK	Medical-Drugs	132	Follow-On	5%
	09/27/2017	NuCana PLC	BRITAIN	Medical-Biomedical/Gene	96	IPO	-18%
	09/27/2017	Handicare Group AB	SWEDEN	Medical Products	89	IPO	n.a.
	09/27/2017	Nightstar Therapeutics PLC	BRITAIN	Medical-Biomedical/Gene	73	IPO	28%
	09/26/2017	Newron Pharmaceuticals SpA	ITALY	Medical-Biomedical/Gene	24	Follow-On	-15%
	09/21/2017	Amryt Pharma Plc	IRELAND	Medical-Drugs	15	Follow-On	8%
	09/19/2017	Nabriva Therapeutics PLC	IRELAND	Medical-Drugs	67	Follow-On	-24%
	09/13/2017	BioArctic AB	SWEDEN	Medical-Biomedical/Gene	84	IPO	n.a.
	09/13/2017	Summit Therapeutics PLC	BRITAIN	Medical-Drugs	17	Follow-On	-2%
3 months	09/06/2017	Straumann Holding AG	SWITZERLAND	Medical Products	228	Follow-On	22%
	08/29/2017	Destiny Pharma PLC	BRITAIN	Medical-Drugs	17	IPO	-27%
	08/25/2017	XSpray Pharma AB	SWEDEN	Medical-Biomedical/Gene	14	IPO	80%
	08/15/2017	Oxford Immunotec Global PLC	BRITAIN	Diagnostic Equipment	34	Follow-On	-7%
	08/15/2017	Nicox	FRANCE	Medical-Biomedical/Gene	26	Follow-On	36%
	08/08/2017	Zealand Pharma A/S	DENMARK	Medical-Drugs	79	IPO	-24%
	07/20/2017	Tissue Regenix Group PLC	BRITAIN	Medical-Biomedical/Gene	45	Follow-On	-28%
	07/07/2017	Cellnovo Group SA	FRANCE	Patient Monitoring Equip	17	Follow-On	-29%
	06/22/2017	GenSight Biologics SA	FRANCE	Medical-Biomedical/Gene	23	Follow-On	-15%
	06/21/2017	Mithra Pharmaceuticals SA	BELGIUM	Medical Products	26	Follow-On	28%
	06/20/2017	Onxeo SA	FRANCE	Medical-Drugs	15	Follow-On	-74%



PRIVATE EQUITY MARKET ACTIVITY

Recent notable M&A / fundraisings in France, Germany, UK, Netherland, Switzerland & Belgium ⁽¹⁾

	DATE	TARGET	CTY	DESCRIPTION	BUYER / INVESTOR
	Nov 17	Xeltis	SWI	Medtech company developing bioabsorbable heart valves	Ysios, Kurma, LSP, VI Par.
	Nov 17	Horama	FRA	Gene therapy for rare, inherited, retinal diseases	Kurma, Pontifax, Omnes
	Nov 17	Pharmaterials	UK	CDMO, specialized in oral and inhaled drug delivery	Quotient Sciences
	Nov 17	Henke-Sass, Wolf	GER	Acquisition of disposable syringe division	B Braun
	Nov 17	NousCom	SWI	Biotech company specialized in cancer vaccines	Abingworth, 5AM, LSP
	Nov 17	Medisize	NET	Medtech manufacturing respiratory and anesthesia products	Flexicare
	Nov 17	Inoges	GER	Operator of outpatient rehabilitation	Celenus Kiniken/Orpea
	Nov 17	Synergy Health	UK	Medtech manufacturing products for wound care and surgery	Verna Group Limited
	Nov 17	Philogeris	FRA	Retirement-home operator	Y. Reboulleau (OBO)
	Nov 17	AZA	NET	Home care services	TZorg
Last month	Nov 17	Oberberg Klinik	GER	Operator of mental health clinics	Trilantic Europe
	Oct 17	Tridem Pharma	FRA	Distribution of pharmaceuticals to the African region	Fosun Pharmaceutical
	Oct 17	AAAP	FRA	Radiopharmaceuticals for molecular nuclear therapy/diagnosis	Novartis
	Oct 17	Jotec	GER	Medtech specialized in devices for cardiovascular diseases	CryoLife
	Oct 17	Vexim	FRA	Medtech marketing devices for vertebral compression fractures	Stryker
	Oct 17	Invento Medical	GER	Single-use high definition endoscopy products	Ambu
	Oct 17	Menix Group	FRA	Orthopedics, dental implants, and cranio maxillofacial surgery	Five Arrow Managers
	Oct 17	Immatics	GER	Cancer immunotherapy with T-cell technology	Amgen, Wellington Part.
	Oct 17	Sebia	FRA	Clinical protein electrophoresis products for <i>In Vitro</i> Diag.	Tethys, CVC Capital
	Oct 17	InflaRx	GER	Clinical-stage company specialized in auto-immune disorders	Bain Cap., Cormorant AM
	Oct 17	Almaviva	FRA	Fifth largest private hospital network	Antin Infrastructure Part.
	Sep 17	Seeklink Brunnen	SWI	Clinic for holistic and depression diseases	Ameos
	Sep 17	Eligo Bioscience	FRA	Biopharma focused on microbiome and CRISPR technology	Khosla & Seventure
	Sep 17	Autolus Ltd.	UK	Development and distribution of CAR-T cell therapies	Cormoran AM
	Sep 17	CMR	UK	Developing robotic systems in the surgical sector	Watrium
	Sep 17	Sophia Genetics	SWI	Provider of genome information storage and analysis solutions	Balderton Capital
	Sep 17	Immunic	GER	Biotech specialized in autoimmune and inflammatory diseases	Omega Funds & Fund+
	Sep 17	Quantum Pharma	UK	Niche pharmaceutical developer, manufacturer and supplier	Clinigen Group
3 months	Sep 17	Rigontec	GER	Biotech specialized in novel immuno-oncology therapies	Merck
	Aug 17	imes-icore	GER	Computer aided manufacturing systems for medical industry	Ardian Expansion
	Jul 17	CoreMedic	SWI	Transfemoral repair systems to treat heart valve malfunctions	SHS Gesellschaft
	Jul 17	Sanofi	FRA	Sanofi's smallpox vaccine live business	Emergent BioSolutions
	Jul 17	Cobalt Light Sys	UK	Provider of Raman spectroscopic instruments for pharma	Agilent Technologies
	Jul 17	Arseus Medical	BEL	Distributor of medical sector equipment	Gimv
	Jul 17	Mimedis	SWI	Design and manufacture of patient specific bone implants	Medartis

⁽¹⁾ Please contact the Bryan Garnier team directly for any detail regarding valuation and transaction size of private company deals



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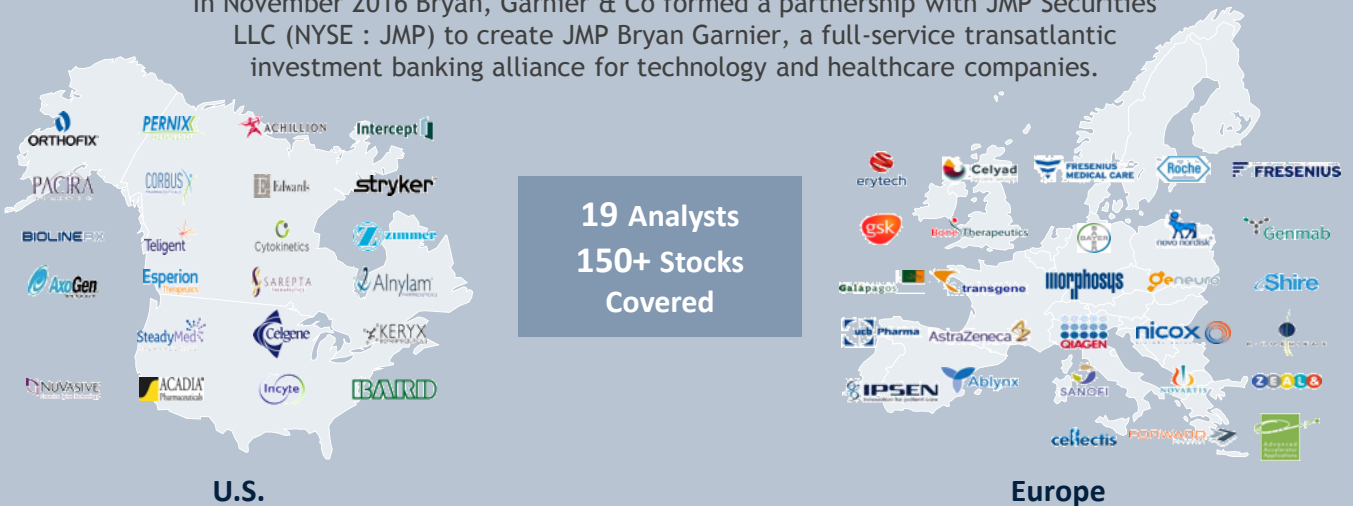
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 biom'up INNOVATIVE BIOSURGERY Euronext Paris IPO €42 507 308 Sole Global Coordinator / Joint-Bookrunner	 symetis Acquired by Boston Scientific \$435 000 000 Advisor to the company	 ZEAL& Follow-on & IPO on NASDAQ OMX €70 000 000 Sole Bookrunner / Co- lead Manager	 Spineart Private Placement Gimv €30 000 000 Joint Lead Manager	 nicox VITRIFIED SCIENCES Follow-ons €71 250 000 Placement Agent	 dbv technologies Follow-on & Nasdaq IPO \$414 500 000 Joint Lead Manager & Bookrunner
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