

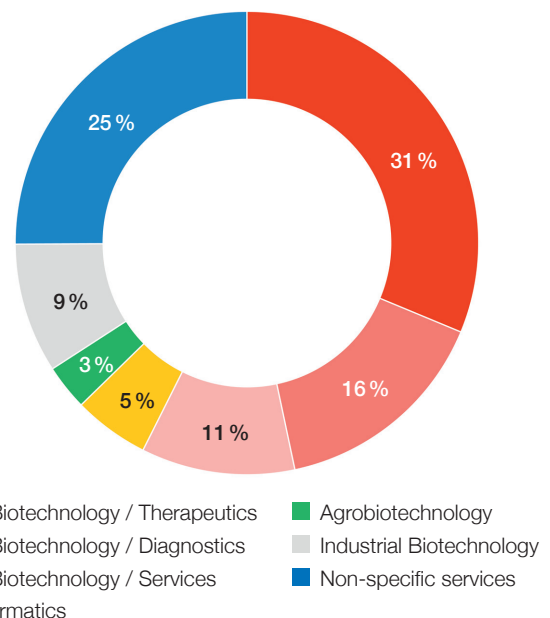
Biotechnology Industry in Germany

Area of Focus

The majority (58 %) of the 623 German biotech SMEs are active in the medical sector. 31 % of these companies develop new drugs e. g. for cancer immunotherapies, autoimmune or neurological diseases. 16 % develop diagnostics, e. g. tests for cancer or rapid pathogen detection. Another 11 % offer services for medical research. These medical biotech companies contribute considerably to the gross value added of the German health care sector.

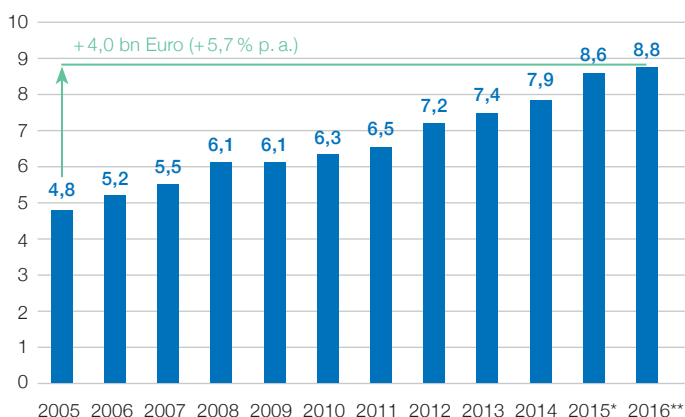
About one tenth (9 %) of German biotechs are active in industrial biotechnology and develop e. g. biofuels, enzymes, dietary supplements or specialty chemicals.

A steady number of 5 % of the enterprises deal with Big Data and Bio-IT and constitute the bioinformatics sector. The number of SMEs devoted to agrobiotechnology is declining. A mere 3 % are active in this field. One quarter of German biotech companies offer non-specific services (25 %).



Source: BIO Deutschland

Gross Value Added (in bn Euro) of Medical Biotech



Period of record 2006–2016 (*extrapolation, **prognosis), Source: GGR, 2016, data basis, Statistisches Bundesamt, computation, WifOR/BASYS, 2016

Gross Value Added

Medical Biotechnology

In 2016, the estimated total gross added value in the sector of medical biotechnology was 8.8 billion Euros. Biotechnology is still a small subsector of the total health industry. However, the growth of medical biotechnology is, with a rate of approximately 5.7%, considerably faster than the rest of the industrial health industry (3.5%). The industrial health industry includes production as well as distribution and whole sale.

The share of biotechnology in total gross added value clearly increased and about 53.000 employees create this value in medical biotech.

Sales of biopharmaceuticals amounted to 8.2 billion Euro in 2015 which accounts for a share of 23 % of the total German pharmaceutical market (source: BCG/VFA 2016).

Dedicated Biotechs in Numbers

As the figures show, Germany's biotech sector continues to grow. Significant increases were seen in revenue and in the number of companies and employees. The number of people employed in the sector rose by 14% to nearly 25,000 over the past year and the number of biotech companies climbed by 5% to 623 in the

same period. Revenue generated in 2016 was up 7% year on year at 3.6 billion euros. Publicly traded companies invested heavily in research and development, while R&D investment by private companies stagnated.

	Private Companies			Public companies			Total industries		
	2015	2016	%	2015	2016	%	2015	2016	%
General key data									
Number of companies	573	603	5	18	20	11	591	623	5
Number of employees*	15,179	17,774	17	6,582	6,996	6	21,761	24,770	14
Financial data (€m)									
Turnover	1,958	2,129	9	1,443	1,505	4	3,401	3,634	7
R&D expenses	681	667	-2	365	451	23	1,046	1,118	7

* For private companies in Germany, for public companies worldwide. Source: EY, BIO Deutschland

Public Biotech Companies

Name	Year of IPO	Stock market	Mainsector	Focus Area
4SC	2011	FWB	Therapeutics	Oncology
Affimed	2014	NASDAQ	Therapeutics	Oncology
B.R.A.I.N	2016	FWB	Bioeconomy	Enzymes
Biofrontera	2006	Düsseldorf	Therapeutics	Dermatology and Skin Disease
co.don	2001	FWB	Services, Technologies & Tools	Cartilage and Joint Regeneration
Curetis	2015	Euronext Amsterdam	Diagnostics	Infectious Diseases
Elanix Biotechnologies	2014	FWB	Therapeutics	Wound Care, Dermatology and Gynecology
Epigenomics	2004	FWB	Services, Technologies & Tools	Oncology
Evotec	1999	FWB	Therapeutics	Neuroscience, Immunology, Diabetes
Formycon	2010	FWB	Therapeutics	Ophthalmology and Immunology
Medigene	2000	FWB	Services, Technologies & Tools	Immunology and Oncology
MOLOGEN	1998	FWB	Therapeutics	Immunology, Oncology and Infectious Diseases
MorphoSys	1999	FWB	Therapeutics	Immunology, Oncology and Inflammation
NOXXON Pharma	2016	Euronext Paris	Therapeutics	Oncology
PAION	2005	FWB	Therapeutics	Sedation, Anesthesia and Critical Care Services
Pieris Pharmaceuticals	2015	NASDAQ	Therapeutics	Oncology and Respiration
Probiobdrug	2014	Euronext Amsterdam	Therapeutics	Neurology
QIAGEN	1996	NASDAQ	Diagnostics	Sample and Assay Technology, Bioinformatics
SYGNIS	2001	FWB	Services, Technologies & Tools	DNA, RNA Amplification, Retro-transcriptase, Protein Interaction
WILEX	2006	FWB	Therapeutics	Oncology