

The Basel life sciences cluster 2017

Going from strength to strength



Initiative Life Sciences Cluster Region Basel

Editorial

Basel is without doubt one of the leading life sciences clusters in the world, particularly with regard to the number of employees and GDP per capita. Yet, what is behind these figures? We provide insight into the cluster's strengths and present the DNA of Basel's life sciences industries. Where did Basel's life sciences companies originate from? Which parts of the life sciences value chain do companies in Basel cover? In which fields of research does the Basel area have its strengths? This booklet is the first of its kind for Basel. It captures the diversity and strengths of the region's life sciences cluster in a nutshell, so to speak. It is primarily aimed at political decision makers, entrepreneurs, company executives, investors, and the interested public.

Definitions

The life sciences sector¹ can be divided in two subsectors:

1. Core fields in life sciences:

pharmaceutical industry, biotech industry, medical technology, bioinformatics, agrochemistry, nanotechnology.

2. Complementary fields in life sciences:

Sales and distribution of life sciences products, medical and scientific research, manufacture of medical devices, medical laboratories, and the like.

In total, 805 firms were counted in the Basel Life Sciences Cluster².

Along the value chain, we distinguish between companies focusing on

1. Core activities (R&D, production, sales, etc.):

448 companies and such providing

2. Support activities (IT and communication consultancy, infrastructure services/support, etc.):

357 companies

In addition, more than 200 companies in neighboring regions (such as southern Germany and Alsace) complement the Basel life sciences cluster.

Core Firm: With a large employment base and a very long history.

Merger & Acquisition: Merged with or got acquired by another corporation.

Research Institution/Corporate Spin-off: Founded by at least one entrepreneur who worked for a research institution and at least one other entrepreneur who worked at a corporation immediately prior to founding the firm.

Corporate Spin-off: Founded by one or more entrepreneurs who worked for a corporation immediately prior to founding the firm.

Subsidiary: With headquarters outside of the Basel region, but maintains a subsidiary here.

Research Institution Spin-off: Founded by at least one entrepreneurs who worked for a research institution immediately prior to founding the firm.

¹According to BAK, Basel Economics, the Life Sciences, 2016

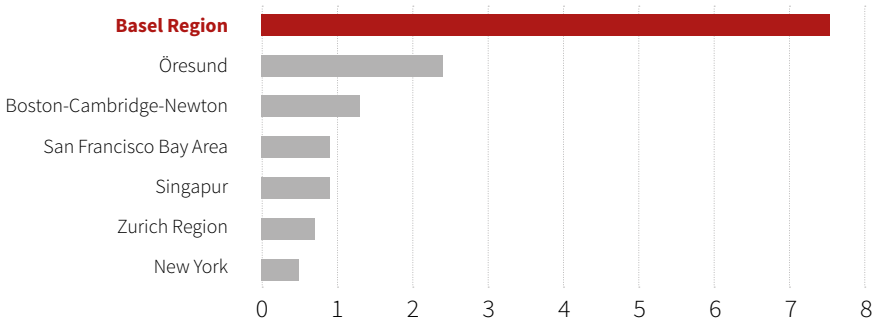
²The Cantons of Basel-Stadt, Basel-Landschaft, furthermore Fricktal (Canton of Aargau) and the municipalities Thierstein-Dorneck

Basel compared ...

Rich source of talent

Top talent pool with approx. 33,000 highly qualified employees in life sciences. Up to 100,000 jobs are generated through the pharmaceutical sector. Nowhere else is the density of talents as high as in the Basel region.³

Industry share of employment in the life sciences (in %)

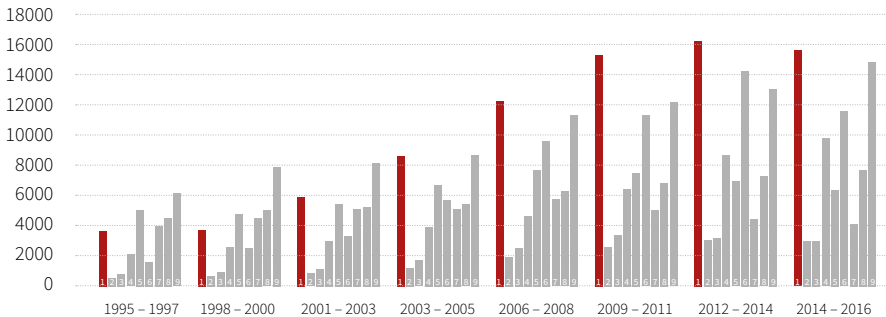


Source: BAKBASEL, 2016

Number one in added value

No other region in the world has a higher production volume in life sciences than the Basel region. In comparison with other locations, Basel has seen strong growth in life sciences since 1991. Taken together, other companies benefit from local pharmaceutical research and production amounting to an added value of over 15.6 million USD.⁴

Nominal gross value added 1995–2016 (in USD million)



1 Basel Region, 2 Zurich Region, 3 Munich Region, 4 Öresund, 5 Paris, 6 Singapur, 7 London, 8 Boston-Cambridge-Newton, 9 SF Bay Area

Source: BAKBASEL, 2016

³BAKBASEL, 2016

⁴Interpharma, 2016

The Basel region dominates Switzerland's life sciences exports

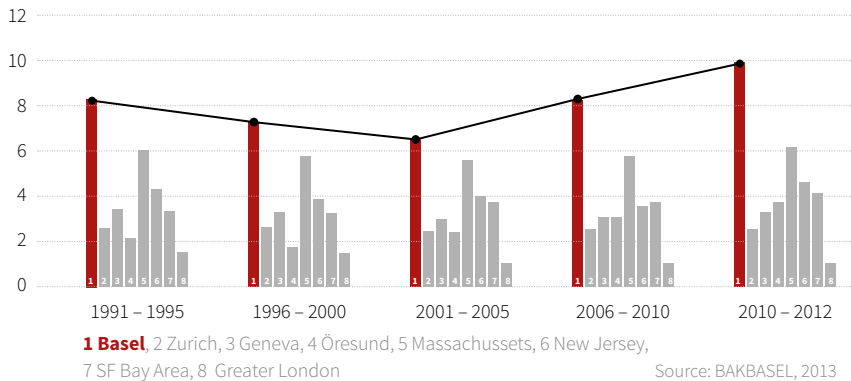
Approx. 60% of the Swiss pharma and chemical exports are developed and produced in Basel.⁵

Frontrunner in innovation

Basel is the most innovative canton in Switzerland with the highest innovation potential and a high density of related industries and knowledge spillovers.⁶

Compared to other leading life sciences locations, Basel has the highest R&D expenditure by industry, making it the world's leading hub for life sciences innovation.⁷

Expenditure on R&D 1991–2016 (in %)



⁵BAKBASEL, 2016

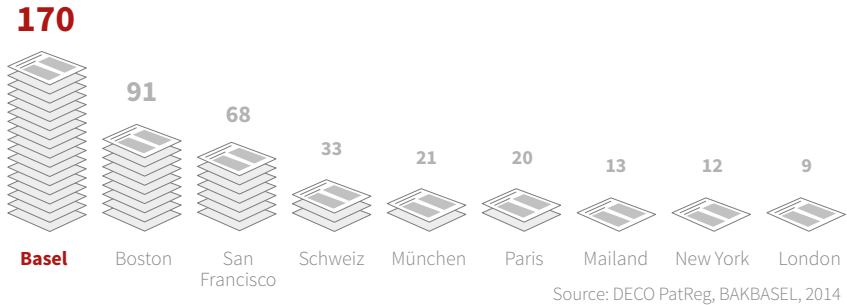
⁶Cantonal Competitiveness Indicator UBS, 2016

⁷BAKBASEL, 2016

Basel is a global leader in innovation and application as indicated by the highest number of patent applications (per million inhabitants) – five times higher than the Swiss average.⁸

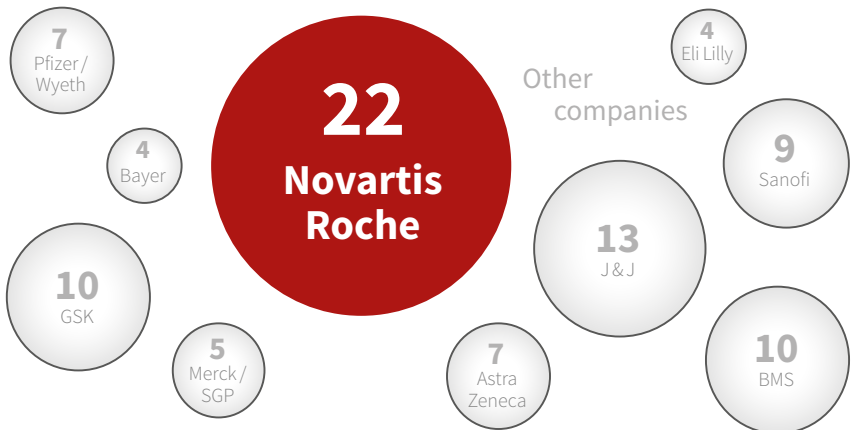
Basel life sciences companies (Novartis & Roche) have been incredibly successful and delivered more new molecules than any of their competitors.⁹

Patent applications in the pharma sector (per million inhabitants)



Basel life sciences companies Novartis and Roche have delivered more new molecules than any of their competitors

New chemical/molecular entity approvals for selected companies



⁸ Interpharma
⁹ FDA, EMA, PMDA, CFDA, 2016

Source: FDA, EMA, PMDA, CFDA, 2016

Everything within short distances

Located in northwestern Switzerland in immediate proximity to Germany and France, the Basel life sciences cluster is exceptionally well accessible. The tri-national EuroAirport, the Rhine, and excellent road as well as train networks provide fast and easy travel.

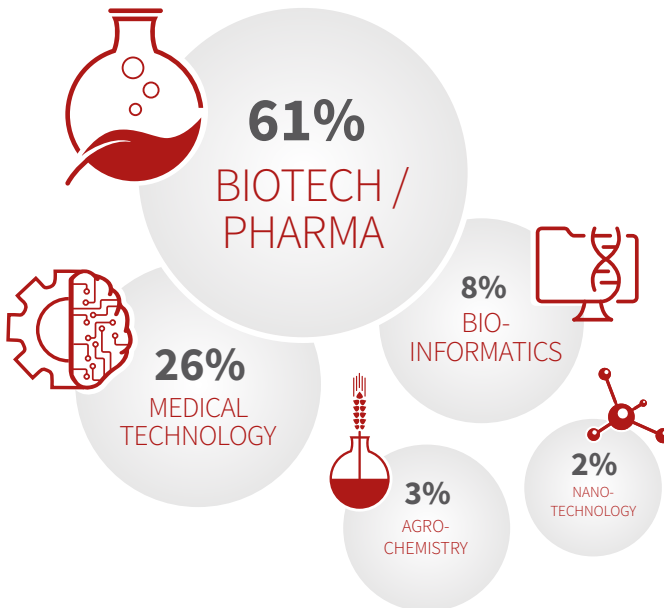
Basel's public transport system is very well developed; moreover, at the core of the cluster you have two of the three top pharma firms within walking distance. Functions such as R&D and headquarters tend to be located at the center of the cluster, while production and supporting functions are located on the outskirts of town.



A leading pharma & biotech hub with an emerging strength in bioinformatics

The companies in the Basel life sciences cluster are predominantly active in biotech and pharma. Two of the top three global life sciences companies, Roche and Novartis, are headquartered in Basel. Other well-known companies including Actelion, a Johnson & Johnson company, Idorsia, Bayer, Clariant, Lonza, Basilea, Evolva, and Santhera bolster the cluster. Today, Basel-based pharmaceutical companies make annual investments totaling six billion Swiss francs (roughly equivalent to USD) in research and clinical development of new active ingredients. Basel is home to a wide range of medical technology companies including global firms like Straumann, Medartis, Camlog, and Cochlear, as well as small and medium-sized companies such as Bühlmann, Nanosurf, and AOT.

Bioinformatics is an emerging subsector and is expected to grow rapidly owing to further development and engagement in precision medicine in the Basel cluster. At the forefront of this promising field are companies like Genedata, Clinerion, and BC Platforms.

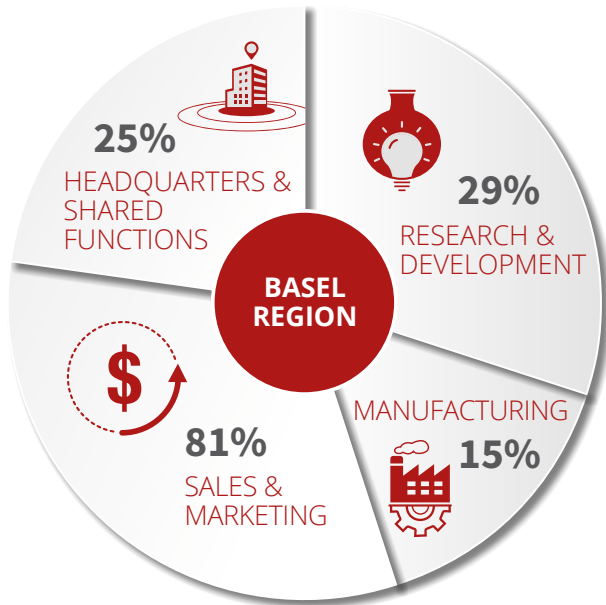


Source: Initiative Life Sciences Cluster Region Basel, 2016
n=341

Strengths along the entire value chain – you will find everything in our region

Basel life sciences firms represent the full scope of value chain functions. The industry is fully integrated and key competencies such as headquarters and shared services, research and development, sales and marketing, as well as manufacturing are all locally situated. The industry benefits from the presence of numerous supporting firms and organizations. This represents a distinct competitive advantage over other life sciences regions as knowledge and competencies can easily transition from R&D to manufacturing, to sales and manufacturing, and vice versa. Knowledge-based industries like the life sciences benefit from such flows, and in this sense the Basel region provides a unique environment.

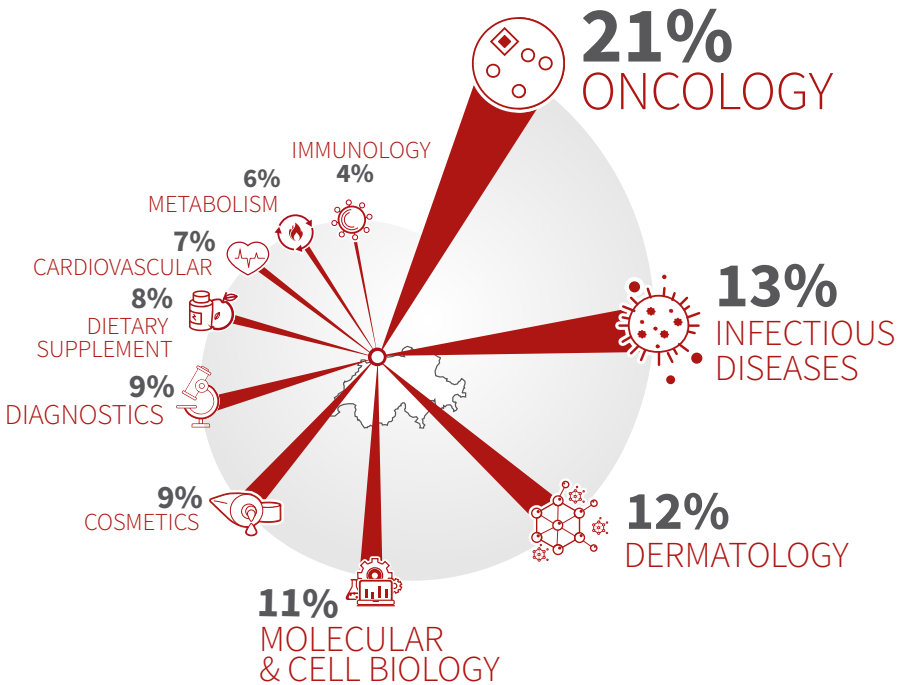
Basel is also in a commanding position with respect to the value chain sectors located up- and downstream of the core cluster, represented, for instance, by 55 contract research organizations.



Source: Initiative Life Sciences Cluster Region Basel, 2016 n=590

The oncology hub – with a high diversity in other fields

The majority of the life sciences firms in Basel conducts research and develops products in the field of cancer treatment. The second most important field concerns infectious disease, followed by dermatology, and molecular and cell biology.

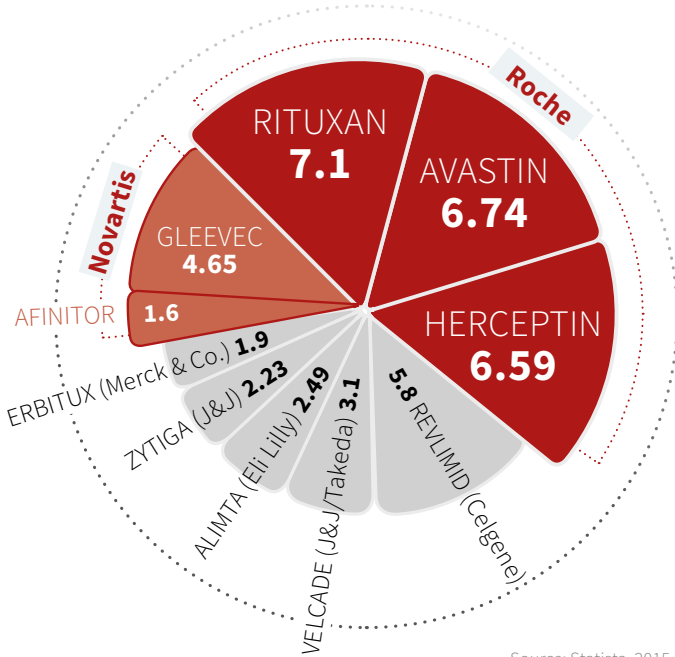


Source: Initiative Life Sciences Cluster Region Basel, 2016
n=215

Giants in cancer treatment

Basel's Novartis and Roche together reach over 43% of the global cancer drugs market. But they are not the only ones. Basel is also home to other companies of varying sizes active in cancer treatment.

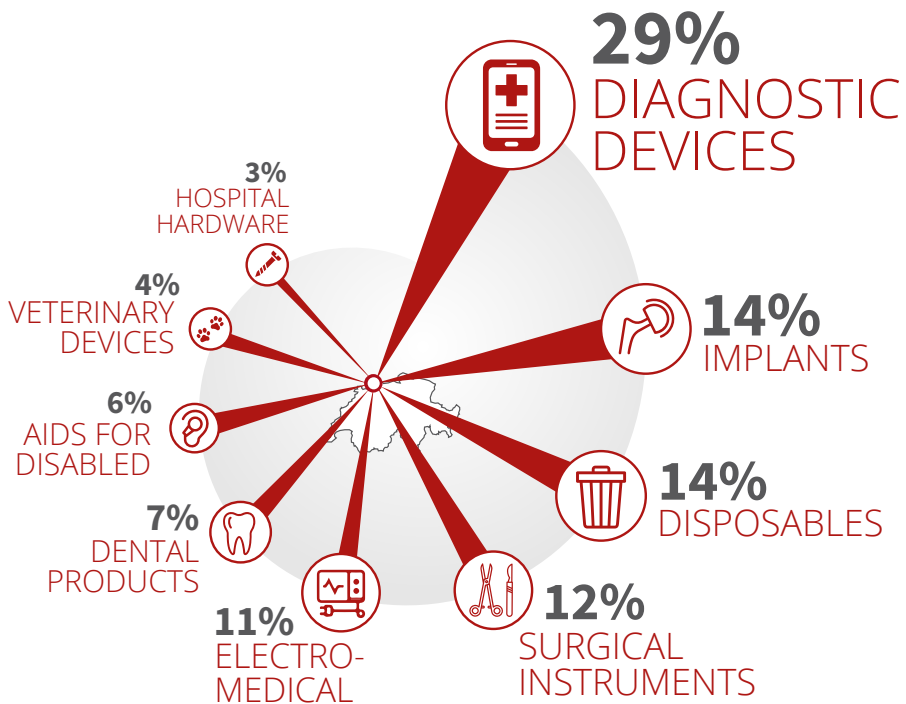
Top 10 cancer drugs worldwide by revenue in 2015 (in billions U.S. dollars)



Source: Statista, 2015

Medtech

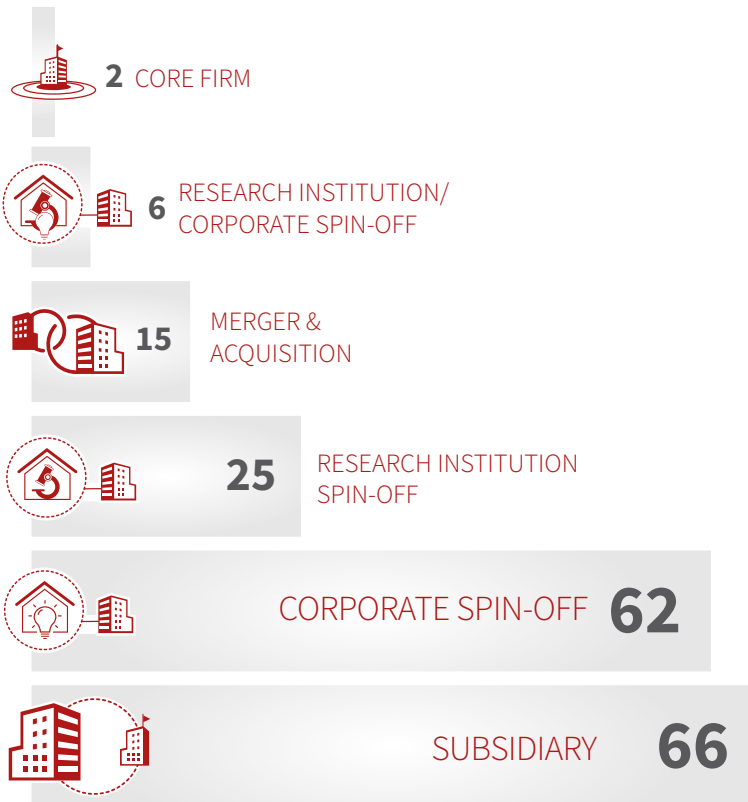
The medical technology industry in the Basel life sciences cluster is active in a wide range of fields. Most important is the development and production of diagnostic devices. This is followed by implants, disposables, surgical instruments, and electro-medical products.



Source: Initiative Life Sciences Cluster Region Basel, 2016
n=114

Flourishing startups and positive path dependency

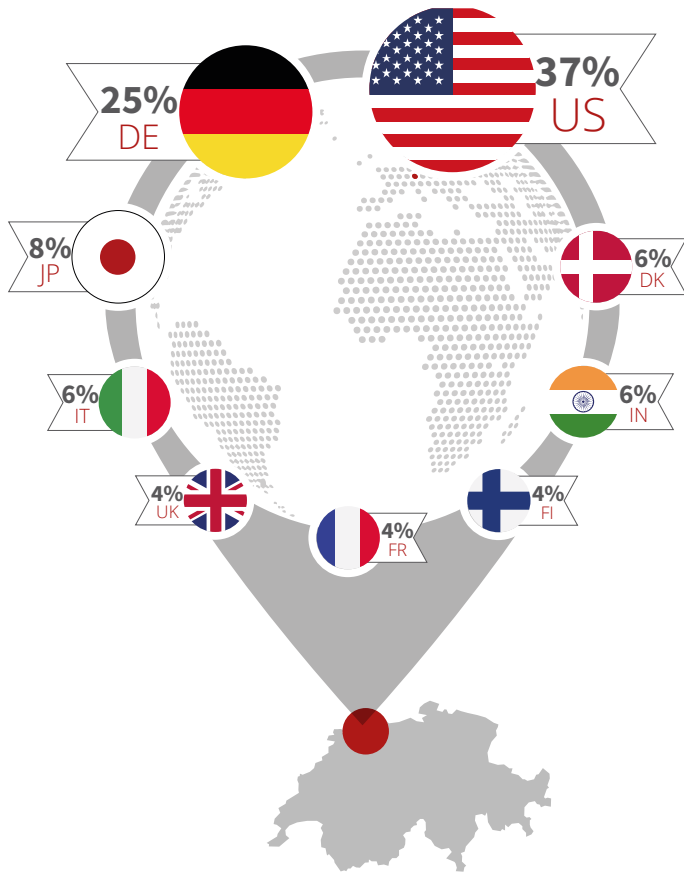
Basel's life sciences cluster is a breeding ground for startups and spinoffs. Many internationally renowned research institutes and universities in and around Basel provide a dynamic basis for research, development, and entrepreneurship.



Source: Initiative Life Sciences Cluster Region Basel, 2016
n=176

Countries of Origin

The Basel region is the perfect location for subsidiaries of life sciences enterprises across the globe. With its multilingual and international talent pool, the density of the Life Sciences Cluster, and its leading position in innovation power and reachability,¹² the Basel region is the perfect place for evolving and strengthening your business.

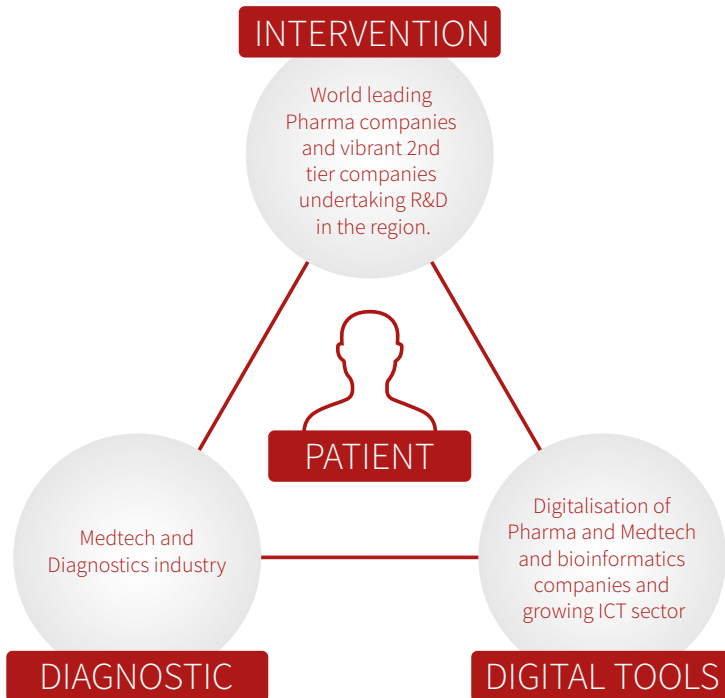


Source: Initiative Life Sciences Cluster Region Basel, 2016
n=51

¹²Cantonal Competitiveness Indicator UBS, 2016

Fertile ground for precision medicine

Precision Medicine is an emerging approach for disease treatment and prevention that will radically change the delivery of healthcare. It takes into account individual variability in genes, environment, and lifestyle to provide the right therapy for the right patient at the right time. The Basel region has the knowledge infrastructure to lead this transformation: it boasts leading Life Sciences firms, entrepreneurial biotech and a strong academic and healthcare provider environment. In the current Life Sciences Strategy, the Basel region has defined clear measures to foster collaboration on major global health challenges between academia, healthcare providers and industry. Focussing efforts on innovative fields that build upon existing local strengths, such as Health and Bioinformatics, Sensors, Health Technology Assessment and Integrated Health technology Delivery, is key. Several on-going initiatives such as DayOne and the Swiss Personalized Health Network could accelerate efforts.



Challenges and outlook

Basel has managed to build one of the most complete life sciences ecosystems worldwide. Its large potential in the region with more than 800 life sciences firms throughout the whole value chain and over 33,000 employees in the industry promises to make Basel's life sciences industry even more competitive over the next decade, harnessing technological change to foster innovation. Outstanding opportunities lie in innovative areas with high growth potential such as digital health, providing Basel the chance to position itself as a leading centre of competence with a strong digital health cluster.

Methodology

The data for this study was collected through the triangulation of different sources. They included existing data files from project partners as well as reliable information from external sources such as Kompass, Moneyhouse, Swiss Biotech Directory, Biotechgate, CRIF Ltd., and the Swiss Federal Statistical Office. Collaboration with the Department of Economic Geography at the University of Bern enabled further analysis and comparison of the findings.

About us

Since 2014 and based on the Initiative Life Sciences Cluster Region Basel developed by the Basel Chamber of Commerce, a group of organizations has been pursuing the objective of strengthening the region as a life sciences hub.

Colophon

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