Swiss biotech – powered by innovation

Supplement to the global biotechnology report 2022 „Beyond Borders“

EY

Building a better working world

Swiss biotech 2021 – innovation drives growth

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Most of the data in this supplement has been already published as part of the Swiss Biotech Report 2022 issued by the Swiss Biotech Association together with EY, amongst others. The 2021 data in the tables is based on information that was available up until March 31, 2022. At this time, some of the companies had not yet disclosed their financial information for 2021. Therefore, some figures were carefully extrapolated on the basis of the latest interim data publicly available.

For the latest information on the life sciences sector refer to:
www.ey.com/en_ch/health-sciences-wellness

Foreword

> Switzerland punches well above its weight in biotech innovation.

Dear clients and friends of the biotechnology sector,

After a five-year break, EY is publishing its Global Biotech Report – "Beyond Borders" again in 2022 covering key developments in 2021. In this context, it is our pleasure to additionally present this Swiss supplement to the global report, in which we assess local differences and similarities with respect to the global biotech trends and developments. We present a snapshot of the Swiss biotech landscape, analyze the financing landscape, and take a closer look at the most notable M&A transactions and collaborations, as well as the product development side.

Reporting record R&D investments in 2021 of CHF 2.6 billion, which can be seen as the validation of Swiss innovation in financial terms, the Swiss Biotech sector continues on a steep upward trajectory. The industry, globally but also in Switzerland, has demonstrated its innovative prowess with its fast-paced responses to fight the Covid-19 pandemic. Not surprisingly, industry leaders are very optimistic about recent advancements in the sector, most notably in mRNA technology.

Backed by its innovative strength and heavy investment in R&D, the Swiss industry boasts a healthy product pipeline, with the number of regulatory approvals continuing at high levels. The capital market and investor landscape is also playing a key role in this development, allowing Swiss biotech companies to raise more than CHF 3.3 billion in funds in 2021. On top of this, there was considerable M&A activity as well as some interesting licensing and collaboration deals. Despite the rise in M&A activity, we are also excited to see the net number of total biotech companies continue to increase in Switzerland, which is important for a dynamic and diverse life sciences ecosystem.

Drilling down deeper, on page 14, we speak with Raymond De Vré, CEO of SIX Swiss Exchange newcomer PolyPeptide Group. He talks about his experience since the company's listing on SIX in 2021, gives us some fascinating insights into the peptide business and shares with us his thoughts on Switzerland's appeal for pharmaceutical and biotech companies.

One common theme stands out in all of our talks with industry leaders and experts: Switzerland punches well above its weight when it comes to biotech innovation. But the outlook into 2022 is also not bright at all levels, and not bright for all biotech companies, which we have analyzed as well.

We hope you find our report interesting and insightful, and welcome your feedback and comments.

Yours sincerely,

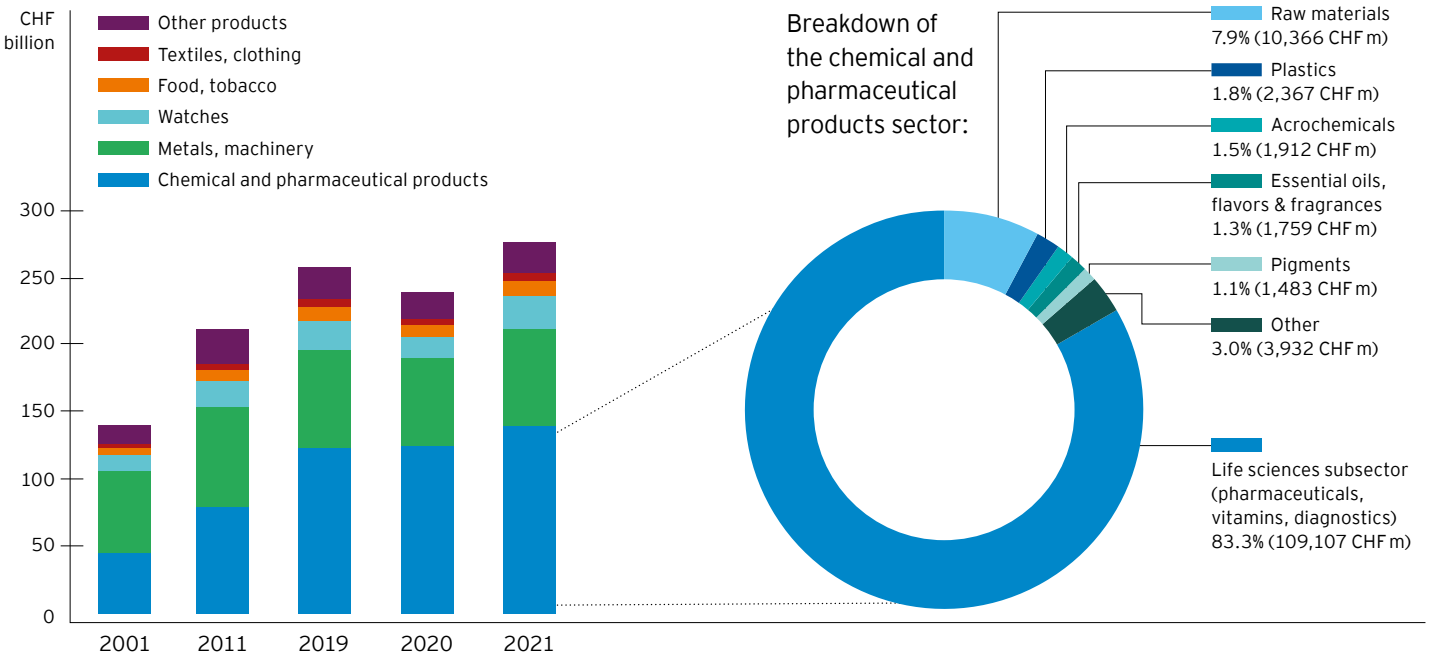
Gabriela Güntherodt
Biotech Sector Leader Switzerland

Frederik Schmachtenberg
Global Life Sciences Lead for Financial Accounting Advisory Services

Swiss biotech 2021 – innovation drives growth

In 2021, the global biotech industry again performed at new heights, largely driven by the unprecedented innovation that permitted the worldwide launch of numerous new vaccines and therapeutics in the fight against the Covid-19 pandemic. The Swiss biotech sector, too, benefited from the launch and manufacture of new mRNA-based vaccines in record time.

Figure 1: Swiss exports by industry sector, 2001-2021.
Pharma and biotech represent 42% of Swiss exports.



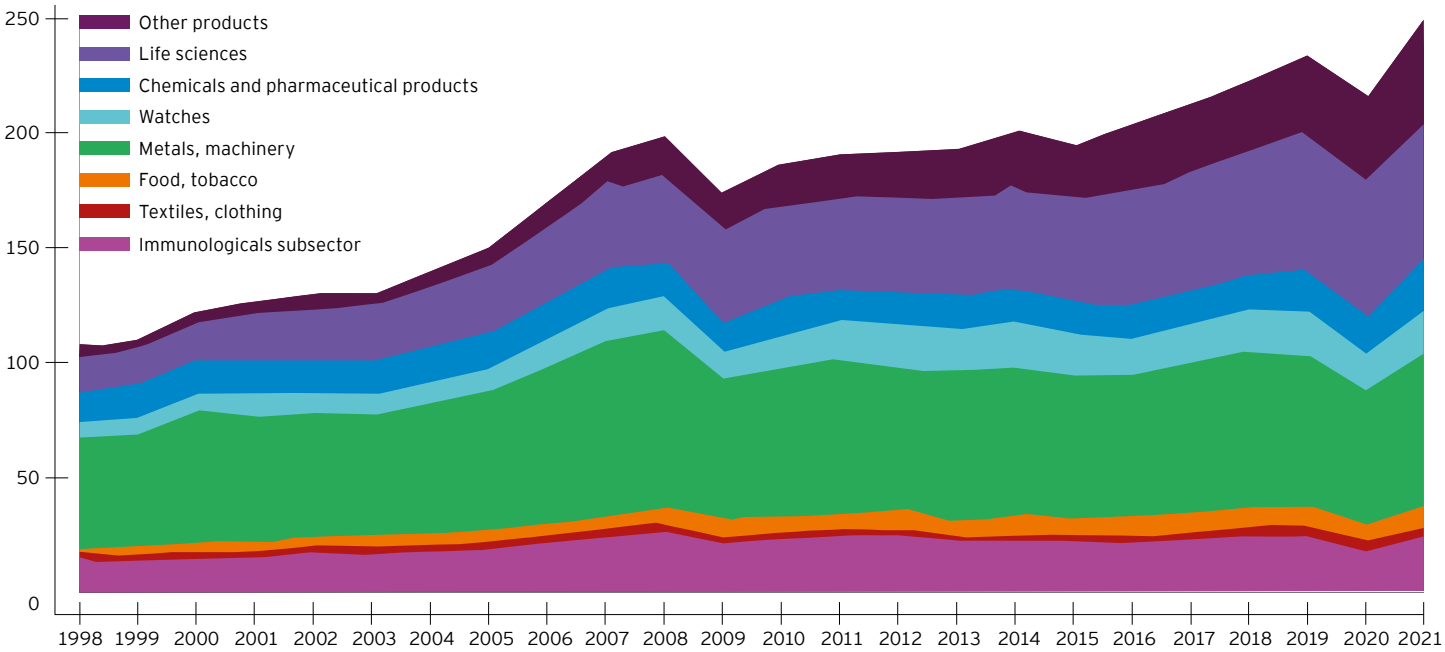
Source: Swiss Biotech Report 2022, EY

Swiss biotech landscape

In 2021, the Swiss Biotech industry generated record revenue of CHF 6.7 billion (2020: CHF 4.9 billion). This significant uptick was mainly driven by an increase in product sales, favorable one-time collaboration and licensing deals as well as a general positive advancement of the product pipeline and the continued high level of regulatory approvals (also see the "Product developments" section page 13).

Both the biotech sector specifically and the life sciences sector in general play a major role in the Swiss economy. The life sciences sector as a whole makes up 42% of Switzerland's total exports. Indeed, Swiss exports of pharmaceuticals, vitamins and diagnostics increased from CHF 99.1 billion in 2020 to CHF 109 billion in 2021 (figures 1 and 2). According to Jan Lucht, Head of Biotechnology at scienceindustries, this growth was especially strong in the immunologicals subsegment, which includes many biotech products (incl. Lonza's Covid-19 vaccine manufacturing), with a total export value of CHF 45.8 billion (up 23.7%).

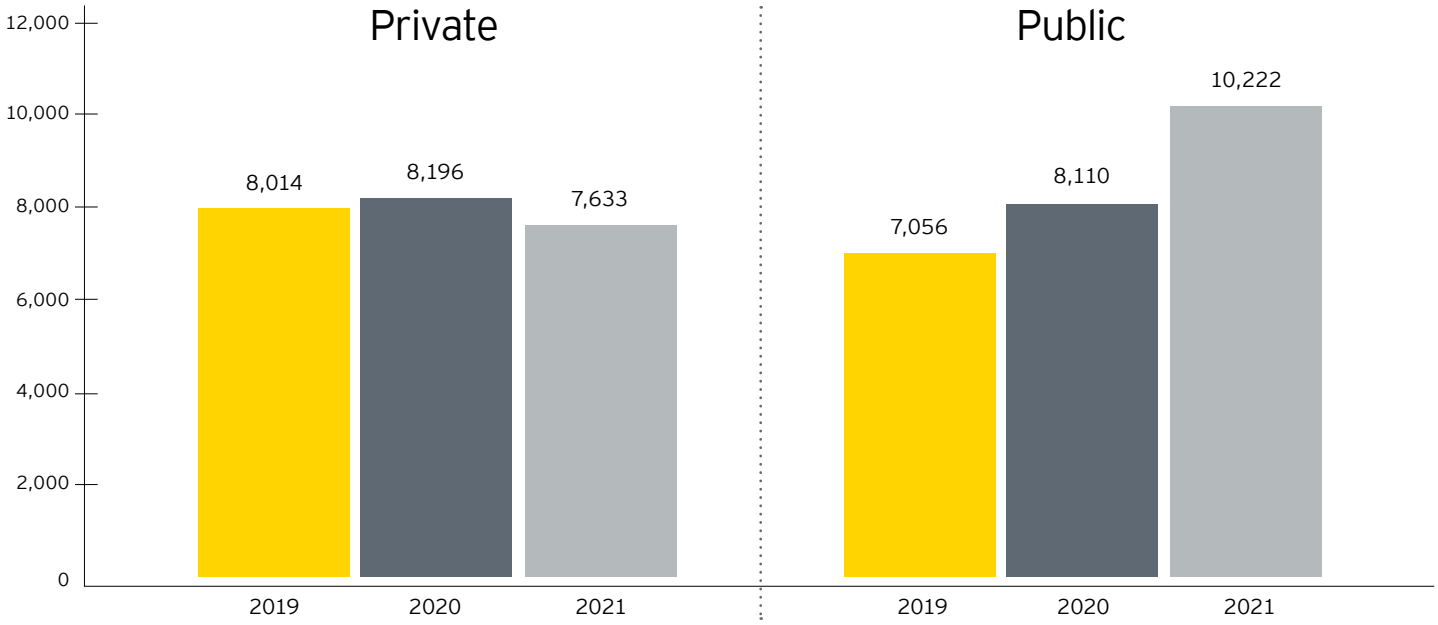
Figure 2: Swiss exports by industry sector, 1998-2021.



Source: Swiss Biotech Report 2022, EY

Furthermore, the Swiss biotech sector plays a major role in the creation of jobs for highly qualified specialists in Switzerland, particularly in research and development (figure 3). While the aggregate headcount of private biotech companies decreased in 2021, the decrease was mainly attributable to the record number of companies that went public in 2021. By the same token, the aggregate head-count of R&D biotech companies increased significantly in the same period. In fact total number of employees working in the R&D biotech sector in Switzerland (private and public biotech companies combined) grew by 9.5% in 2021.

Figure 3: Number of Swiss R&D biotech employees, 2019-2021.



Source: Swiss Biotech Report 2022, EY

Swiss biotech financing

Following the record year 2020, financing activity in Switzerland's biotech sector continued at a very high level in 2021, with the sector raising more than CHF 3.3 billion. Of that amount, public companies obtained roughly CHF 2.5 billion and private companies the remaining CHF 0.8 billion. The slight decrease of 3.4% compared with the prior year is mostly attributable to a halving of follow-on financing transactions, which had accounted for almost two-thirds of financing activities in 2020.

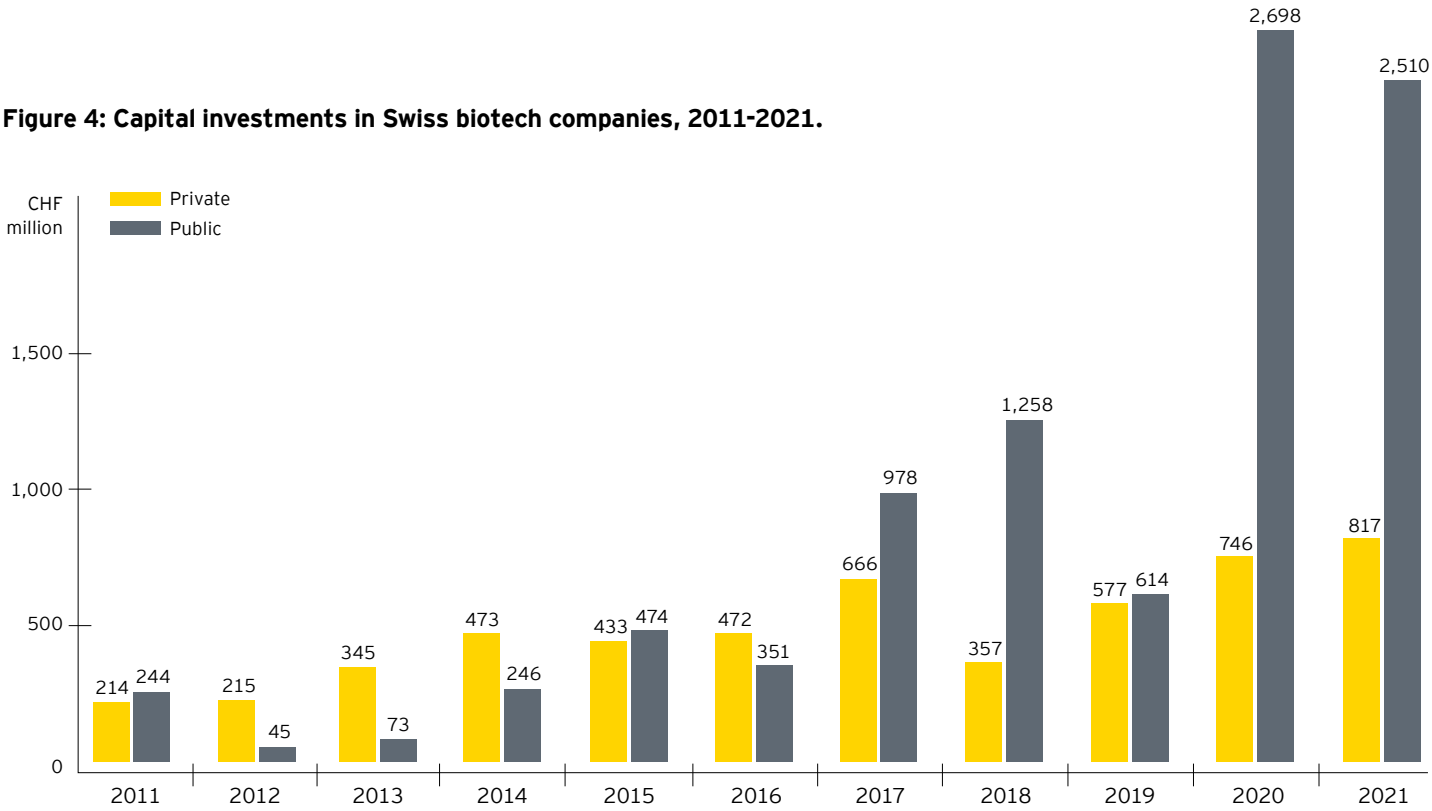
Venture capital financing reached a new record level, raising almost CHF 721 million and up 1.7% year on year. Swiss start-ups Anaveon and Numab Therapeutics recorded the largest private company financing transactions in 2021, with CHF 110 million and CHF 100 million raised respectively (table 1). Furthermore, several biotechs benefited from cantonal Covid-19 loans as well as the Covid-19 innovation program financed by the Swiss government.

Table 1: Largest private financing transactions in 2021.

Private companies	in CHF million
Anaveon	110
Numab Therapeutics	100
Alentis Therapeutics	60
Anjarium Biosciences	57
Oculis	52
Total	**379**

Source: Swiss Biotech Report 2022, EY

Figure 4: Capital investments in Swiss biotech companies, 2011-2021.



Source: Swiss Biotech Report 2022, EY

Follow-on financing transactions (CHF 1,159 million) made up roughly one-third of total 2021 financing transactions, as compared to two-thirds in the prior year (figure 5). Half of that amount was raised by one single company (Bachem), while the remainder was distributed across several different biotech companies. The large drop in follow-on financing transactions in 2021 compared to 2020 is partly attributable to significant contract revenue collected by several biotech companies in 2021, through existing or new collaboration agreements (e.g., CRISPR/Vertex from June 2021 with an upfront payment of USD 900 million, received in full in 2021) or milestone payments (e.g., AC Immune, Basilea), both of which took pressure off the need for follow-on financing transactions in 2021.

A number of successful European IPOs were also announced in 2021, five of which either involved Swiss companies or used the SIX Swiss Exchange as a platform. NLS Therapeutics, VectivBio, and SOPHiA GENETICS saw their public market debut on Nasdaq during the 2021 spring/summer timeframe. The latter two were additionally able to trigger their respective greenshoe options, allowing them to sell investors more shares than initially planned.

Schlieren-based Molecular Partners completed a secondary listing on Nasdaq in the third quarter of 2021. Meanwhile, the SIX Swiss Exchange welcomed the successful IPO of the PolyPeptide Group in the first half of the year (see interview with PolyPeptide Group CEO, Raymond De Vré, on page 14).

Idorsia also benefited from the favorable financial climate, placing a CHF 600 million convertible bond on the SIX Swiss Exchange at the end of July 2021. An additional transaction worth mentioning with reference to the SIX Swiss Exchange was the reverse merger between Polyphor and EnBiotix (a private U.S. biotech), leading to the creation of Spexis as a new company, which took over Polpyhor's spot on the trading floor in Zurich.

The recently founded company MoonLake Immunotherapeutics also started its preparations in late 2021 for a SPAC[1] transaction on Nasdaq, with an ambition to raise approximately USD 230 million.[2] This SPAC transaction was executed in April of 2022.

Table 2: Largest public financing transactions in 2021.

Public companies	in CHF million
Idorsia	600
Bachem	584
Sophia Genetics	234
CRISPR	229
PolyPeptide Group	191
Total	**1,838**

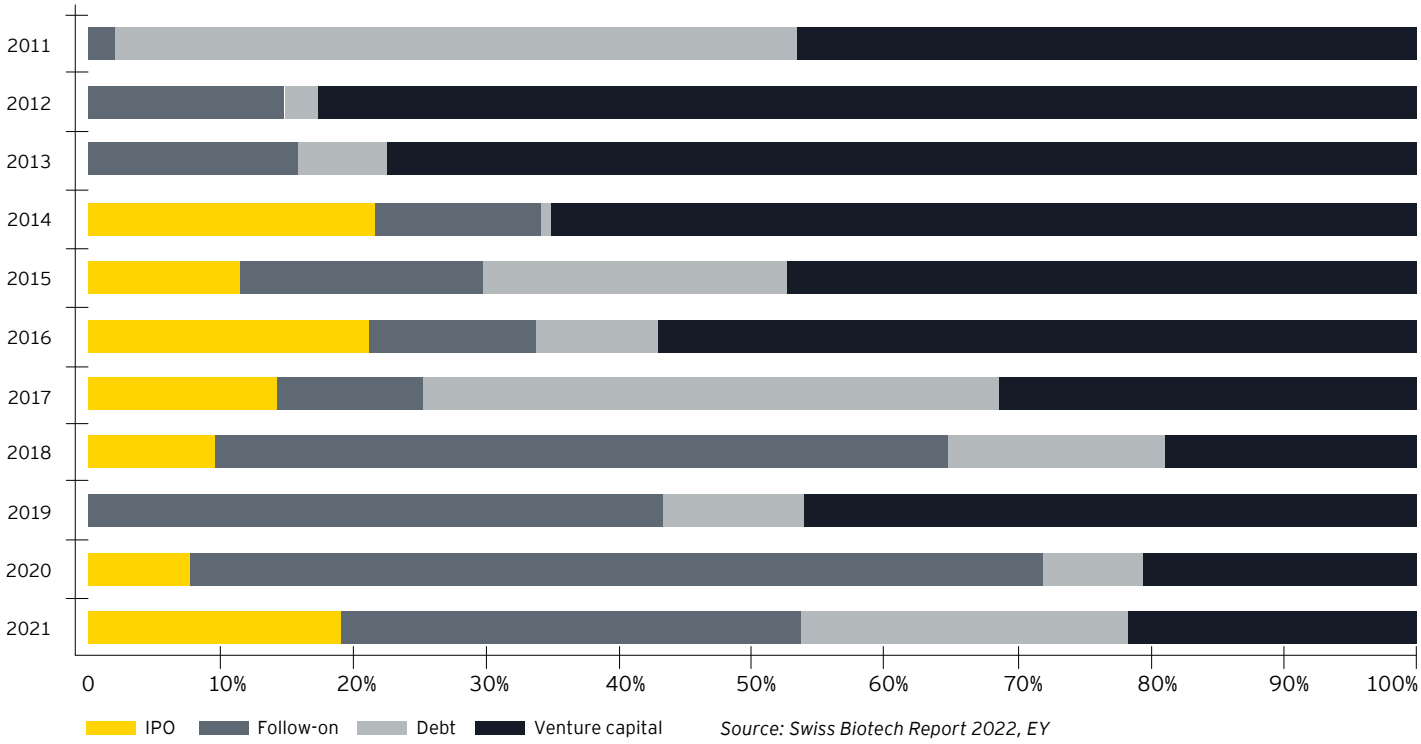
Source: Swiss Biotech Report 2022, EY

Furthermore, in the spring of 2021, Pureos Bioventures announced the final closing of its first fund BB Pureos Bioventures LP, with committed capital of USD 205 million. Pureos intends to exclusively invest in innovative private drug development companies with an emphasis on novel biological drugs and emerging modalities, such as nucleic acid or cell and gene therapies.

Biotech companies can rely on a deep and cost-effective capital market in Switzerland, although listing on the Swiss stock exchange is still not the first choice for many. That said, the Swiss capital market is continually evolving. For instance, SPARKS, a new equity segment announced by the SIX Swiss Exchange back in 2021, opened for trading in 2022. Featuring somewhat less stringent listing requirements, the new venue is geared toward the SME segment. In February 2022, the biotech company Xlife Sciences became the first company to list its shares on SPARKS.

1 Special purpose acquisition company.
2 Press release, 4 October 2021: https://ir.moonlaketx.com/news-releases/news-release-details/moonlake-immunotherapeutics-ag-and-helix-acquisition-corp

Figure 5: Biotech financing categories in Switzerland, 2011-2021.



Source: Swiss Biotech Report 2022, EY

Facts and figures Switzerland

1,159
CHF million
Follow-on financing

721
CHF million
Venture capital

817
CHF million
Convert. bonds, debt

630
CHF million
IPO proceeds

3.3
CHF bn

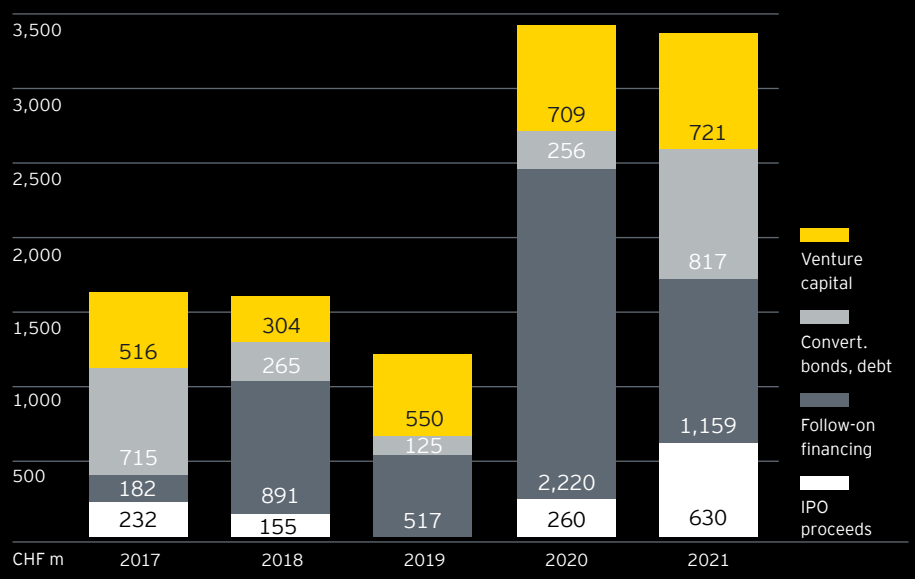
2nd-best financing year ever
Irrespecitve of the drop in follow-on financings new record levels were achieved in all other financing categories

+1.7% Venture capital
−48% Follow-on financing
+219% Convert. bonds, debt
+143% IPO proceeds

Development of financing categories in Switzerland

Continued high financing levels

Record high financing levels in three categories



5 IPOs

Highest ever IPO and secondary listing amounts raised with transactions at NASDAQ respectively SIX Swiss Exchange

IPO

Highest ever venture capital financing in Switzerland. Two biotechs achieved financing rounds above CHF 100 million.

2nd-best year ever in follow-on financing after the record year in 2020, irrespective of the Covid-19 pandemic.

IPO, debt and venture capital financings climbed to new record levels in 2021.

Source: Swiss Biotech Report 2022, EY

M&A and collaborations

Swiss biotech companies were involved in a number of M&A transactions in 2021, either as an acquirer or as target company. The following is a selection of transactions:

- The German Grünenthal Pharma Group announced in the spring of 2021 the acquisition of Mestex AG and its phase-III-ready investigational medicine MTX-071 for the treatment of pain associated with osteoarthritis of the knee.

- Geneva-based Relief Therapeutics SA acquired Applied Pharma Research to transform the company into a fully integrated and diversified biopharmaceutical business. The transaction price was CHF 21.5 million in cash and CHF 45 million in Relief Therapeutics shares.

- Novartis executed the buyout pact with Zurich-based Cellerys in a bid to expand its MS portfolio.

  Novartis purchased Gyroscope Therapeutics for USD 1.5 billion, adding a one-time gene therapy that could transform treatment for geographic atrophy, a main cause of blindness.

  Furthermore, Novartis acquired Arctos Medical, in a move to expand its optogenetics portfolio by bringing gene therapies to patients with severe vision loss.

- Vifor Pharma announced the acquisition of two companies: Swiss-based Inositec and Spanish-based Sanifit Therapeutics. Inositec received an upfront payment of CHF 20 million and will be eligible for success-based clinical earn-out payments in the low triple-digit CHF million range.

  Vifor Pharma also acquired 100% of the outstanding shares in Sanifit Therapeutics, thus obtaining full global rights for SNF472 and further enhancing the company's portfolio of innovative assets. Shareholders of Sanifit received an upfront payment of EUR 205 million; clinical, regulatory and market access milestone payments of up to EUR 170 million; and tiered sales-based milestone payments that could reach a mid- to high triple-digit EUR million figure at peak sales.

  Aside from the two aforementioned acquisitions, Vifor Pharma later in 2021 became an acquisition target itself. CSL Behring Group offered USD 11.7 billion to buy Vifor Pharma, striking the biggest biopharma deal 2021 globally.

- Novaremed acquired Basel-based Metys Pharmaceuticals, broadening its pipeline focused on novel, non-opioid development candidates for chronic pain indications with the addition of two complementary development projects. Among them is the patented phase II clinical candidate MP-101.

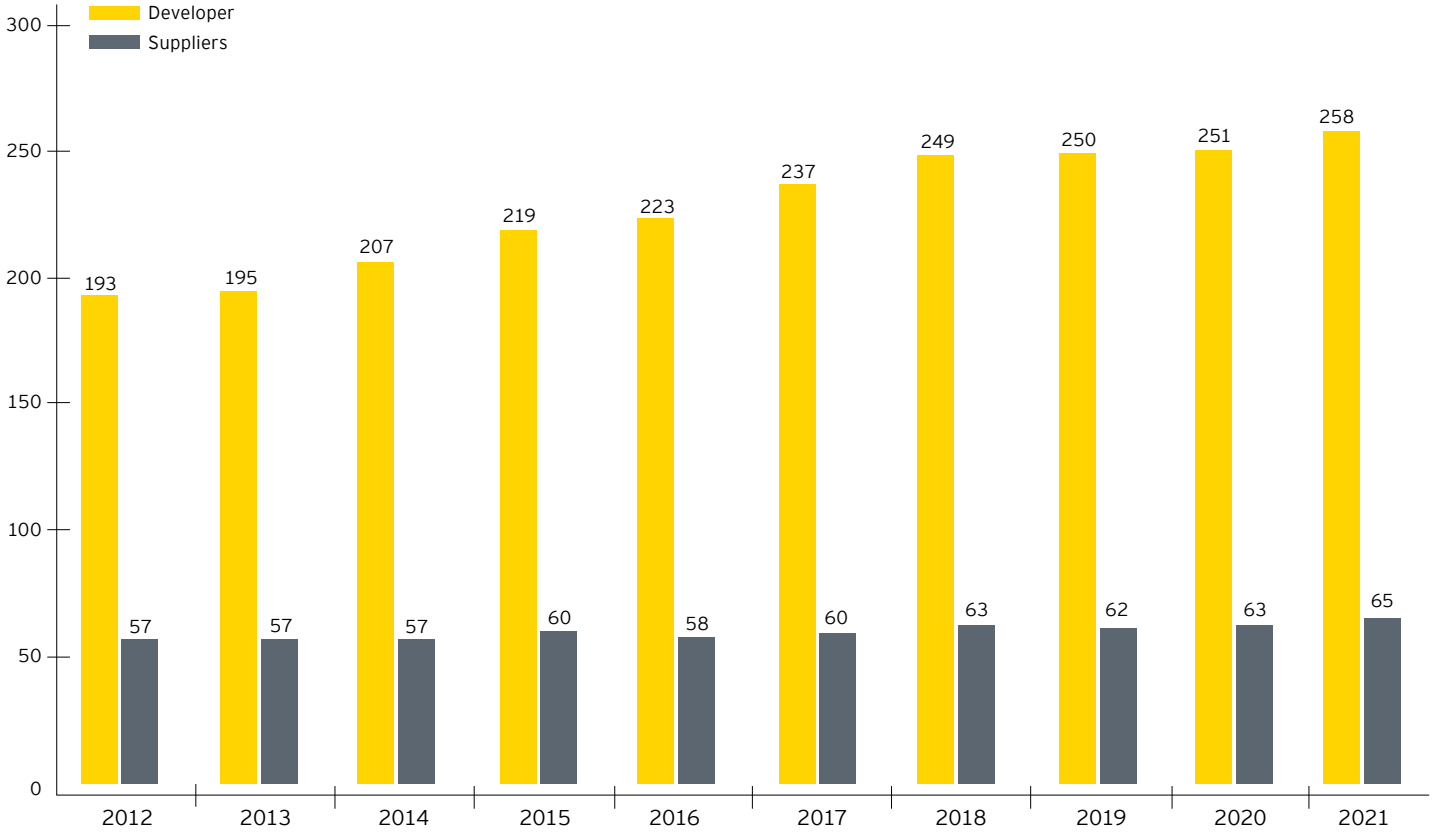
- Chord Therapeutics, a clinical stage biopharmaceutical company developing drugs for rare neuroinflammatory diseases, announced its acquisition by Merck KGaA. The strategic acquisition will enable Merck KGaA to expand its neurology pipeline to develop Chord's lead drug candidate, CRD1 (cladribine), for the treatment of generalized myasthenia gravis and neuromyelitis optica spectrum disorder.

- The D-BSSE spinoff deepCDR Biologics, which originated from the Laboratory of Systems and Synthetic Immunology of Sai Reddy, became part of Alloy Therapeutics, a biotechnology company specialized in antibody drug discovery. The acquisition of deepCDR will add expertise in bioinformatics and machine learning to Alloy's antibody discovery process and workflow. The deepCDR team will remain in Basel and serve as a permanent Alloy research site.

- Atlas Antibodies purchased evitria, a leading firm in transient recombinant antibody expression in CHO cells. This transformative acquisition brought together a provider of highly validated research antibodies and a front-runner in the field of custom recombinant antibody expression.

- DiNAQOR acquired EHT Technologies GmbH to advance engineered heart tissue R&D capabilities.

Figure 6: Number of biotech companies in Switzerland, 2012-2021.



Source: Swiss Biotech Report 2022, EY

- An unexpected setback, Polyphor stopped the phase III clinical trial of its lead molecule in the summer of 2021 and subsequently evaluated strategic options. Polyphor announced a merger with EnBiotix, which was completed by year-end 2021. As a result, Polyphor was replaced at the SIX Swiss Exchange with the "merger product" Spexis.

- VectivBio announced the closing of the acquisition of Comet Therapeutics, a privately held company active in the development of drugs to address previously untreatable inherited metabolic diseases (IMD).

Despite the healthy M&A activity, the total number of biotech companies in Switzerland continues to grow, creating a dynamic and diverse ecosystem (figure 6).

In addition, many companies continue to find license and collaboration agreements appealing, as is evident from the following non-exhaustive list of deals signed in 2021:

- Lonza and Moderna entered a new agreement to double drug substance capacity production for Covid-19 in Visp.

- Deep Breath Intelligence entered into a collaboration with Bayer.

- Genedata and Sanofi extended their collaboration in pharmaceutical development and manufacturing science.

- Organon and ObsEva entered into a global license agreement to develop and commercialize ebopriprant.

- Molecular Partners and Novartis signed a collaboration agreement to develop DARPin-conjugated radioligand therapeutic candidates for oncology.

Product developments

In 2021, the number of regulatory approvals in the industry remained on a par with prior years. More specifically, EMA approved 91 new drugs in 2021 (2020: 97 drugs), while in the United States the FDA approved 50 new drugs (2020: 57 drugs), not counting the emergency use-approvals for therapeutics in the fight against Covid-19, one of which in fact originates from Humabs in Bellinzona.

Furthermore, the new FDA approvals include three new drugs that the Swiss Biotech sector can proudly claim as "originated in Switzerland", namely: Zynlonta by ADC Therapeutics, Adumhelm by Biogen/Neurimmune and Ponvory by J&J/Actelion/Idorsia.

The number of drugs approved by Switzerland's national drug authorization and supervisory authority, Swissmedic, was up on the prior year at a total of 45 new drugs (2020: 42). However, as usual there were also some setbacks in clinical developments in 2021. Polyphor, for instance, announced that its late-stage breast cancer study had failed, which led to a reverse merger transaction between Polyphor and EnBiotix (also refer to the "Swiss biotech financing" section on page 7).

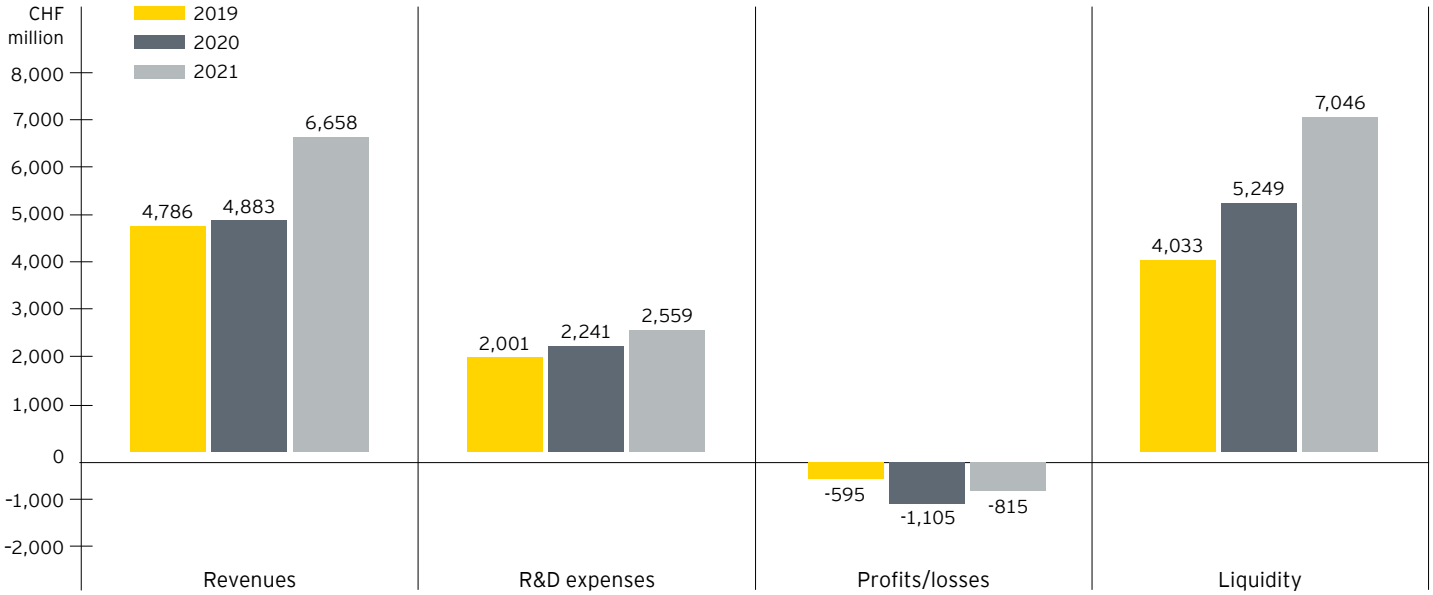
Total R&D expenditure rose steeply on the back of the best-ever financing year in 2020 and as a result of R&D efforts addressing many diseases, including efforts to support the global fight against Covid-19 (figure 7).

Switzerland has ranked first in the Global Innovation Index every year in the period from 2011 to 2021. According to David Rees and Ingrid B. Müller of the Swiss Federal Institute of Intellectual Property, in the area of biotech patents, Switzerland has a very high competitive impact[3] despite the country's otherwise modest IP portfolio in terms of size. This above-average impact is due to Switzerland's high market coverage[4] and its exceptionally high technology relevance[5].

An important factor contributing to Switzerland's consistent success is the extensive cooperation and co-authorship of Swiss-based inventors with colleagues at international organizations, universities and research institutes based abroad, as a result of which Swiss-based inventors are often credited on high-profile biotech patents.

Overall, in a buoyant global biotechnology market that continues to benefit from the global fight against the Covid-19 pandemic, the Swiss biotech sector has shown a healthy development and continues to demonstrate that it punches above its weight when it comes to innovation.

Figure 7: Total revenue, R&D expenses, profits and losses, liquidity of Swiss biotech companies, 2019-2021.



Source: Swiss Biotech Report 2022, EY

3 Defined as the product of technology relevance and market coverage.
4 Market coverage is an indication of the extent to which a patent has international protection scope.
5 Technology relevance is a measure of the citation frequency of a patent normalized for the technical area in question.

Swiss biotech: an insider perspective

Interview with Raymond De Vré of the PolyPeptide Group

An international company with Swedish roots, PolyPeptide kicked-off last year's IPO season at the Swiss Stock Exchange (SIX). One year on, Raymond De Vré, the new CEO of the contract manufacturer of peptides and oligonucleotides APIs (active pharmaceutical ingredients) shares in an interview how the journey as a listed company is going so far and what lessons he has learned along the way.

A physicist by training, Belgium-born Raymond De Vré started his journey in life sciences at McKinsey & Company, where he worked as a consultant for 15 years before he decided to take the plunge and join the industry, first as member of the executive committee of Dr. Reddy's Laboratories, where he helped build and managed the biologics business. In April of last year, on the day of the IPO, he took the helm of PolyPeptide Group.

Headquartered in Baar, canton of Zug, the PolyPeptide Group has production facilities in six locations and some 1,100 employees around the globe. The fast-growing contract development and manufacturing organization (CDMO) is a leader in peptides for use in approved pharmaceutical products, in drugs in clinical development as well as in generic products. EY spoke with Raymond De Vré about his experience so far since the IPO, the growth opportunities on the horizon, and the appeal of listing on the Swiss market.

EY:
Looking back, a year on since your IPO on the Swiss Stock Exchange, how are you doing, what has changed for you and what has been your experience of Switzerland as an IPO location?

Raymond De Vré:
You know, in the run up to the IPO, there was a story we were telling the market in our prospectus and our roadshow when we were trying to convince investors to come on board. Fast-forward twelve months, and what we are seeing is that, frankly, the past year as a listed company has confirmed the story of the IPO. Whether it's market trends, whether it's competitive trends, whether it's the interest in peptides, whether it's the financial performance – ours as a company, but also of the industry in general – if we had to do an IPO today, I think we would tell exactly the same story.

Specifically, in terms of financials, I'm sure you know that our results for 2021 were quite strong, for a variety of reasons: some structural and also due to the tailwind from Covid. But regardless of those exogenous factors, I think it has largely been a positive story that is helping in building our credibility.

EY:
The vast majority of last year's biotech IPOs were in the United States. What made you choose Switzerland as your primary IPO location? What advantages do you see there?

> "Switzerland is one of the best places in the world to run a pharma or biotech business.

Raymond De Vré:
We did look at several options – the United States, United Kingdom - but we chose Switzerland for a number of reasons. Most importantly, SIX is the ideal stock market for CDMOs, given the long-standing presence of companies such as Lonza, Bachem, Siegfried and others. And I think there was a clear sense that we would benefit from listing in a country where there is an investor base that's familiar with the industry, the CDMO business model and the competitive dynamics. Most of the investors and asset managers that attended our virtual IPO roadshow were familiar with the business, which made the whole process all the more efficient.

The second reason is simply that we could. We are a company that is growing, that is sizable, that is profitable. At the time of the IPO, our 2020 revenue was atEUR 223 million. We had EBITDA of almost EUR 62 million in a growing market. That

makes it easier to go public in a country like Switzerland. I don't want to be critical of requirements in other stock markets. But if it's not necessary to be listed in the United States, I'm happy to avoid it. The administrative requirements there are tremendous. It has to be worth the effort.

EY:
And yet some Swiss companies do choose to go public in the United States.

Raymond De Vré:
Well, it's a different situation if you're a start-up that's going to lose money for the next five to six years. Companies like that still have a difficult time going public in Europe in general and in Switzerland in particular. There's a reason why even Swiss-based start-ups go to Nasdaq. We also have a recent example of a Swiss company aiming to create visibility in the US consumer market through a US-listing. But we are in a B2B environment. Our priority was finding access to suitable investors through an efficient, well regulated and internationally recognized market.

EY:
As you mentioned, you're not the only CDMO in Switzerland by any stretch. You have some very strong Swiss-based competitors. What sets PolyPeptide apart?

Raymond De Vré:
Two aspects immediately stand out in my mind. Firstly, we have a differentiator that is driven by our long history. PolyPeptide was founded in 1952, which means that we have been making high-quality peptides for 70 years. Peptides, I always say, have a very complex chemistry, and making them is as much art as it is science. Nothing replaces the time we have invested and the capabilities we have built over the years, always in close collaboration with our customers. We have at our sites colleagues who have been making peptides for 30 years and longer. It's hard to grow or buy that know-how. If you tried to set up that level of competence from scratch tomorrow, you would find it difficult.

Our second major differentiator is our modular manufacturing footprint, including pipeline-building sites in Europe and the US. In general, this is an industry that requires a lot of CapEx-intensive manufacturing capacity, which is not easy to build. Even customers who order small volumes for their early-phase clinical trials, for instance, want the reassurance to know you have the capacity to ramp up production if their

drug proves successful. They don't like to change suppliers if they can avoid it. At the moment, we are working with a customer on their early-stage project who is already asking, "if the drug is successful, where are you going to produce it?" They don't need the capacity today, but they still want to know that we can deliver when the time comes. We typically work with customers over many years and reassure them that we can meet their evolving capacity needs.

EY:
Last year, you formalized your approach to the environment, sustainability and governance (ESG). What is your agenda in general?

Raymond De Vré:
Well, as a listed company there are a few things that are new to us. One substantial difference is the priority that ESG now has on our agenda. That means that we now have to take a far more systematic and documented approach to ESG: our customers require it, our investors expect it, and our people too, of course. And frankly, that more rigorous approach is also important for our business. So it concerns the entire stakeholder map, if you will.

With this in mind, last year we conducted a materiality assessment with support from a specialized consultancy firm to identify points that are of relevance for us. We identified 12 topics, which we grouped into three major themes: sustainability, people and business excellence in the sense of ensuring we manage and control our operations and supply chains well. In other words, we're talking about a very detailed and extensive agenda.

> Making peptides is as much art as it is science.

EY:
And that would include green chemicals, presumably.

Raymond De Vré:
Absolutely, green chemistry is particularly important for us in the context of ESG. The 12 principles of green chemistry have been around for a while, but the topic has moved up the agenda of both the industry and customers. That's a fairly recent development. The greatest topic for us are the solvents used in peptide production. That's an issue that all of us in the industry will have to continuously address. It's difficult because solvents are part of the drug dossier, so any measures you introduce for approved compounds have regulatory and quality implications. For new projects it is easier, and we have started, for example, to introduce a new rinsing technology with a notably reduced solvent consumption. There is a trade-off between price, time and quality, but that's part of the journey that we are willing to take together with our customers. PolyPeptide is committed to finding solutions and we believe progress is possible at many different levels.

EY:
You're growing. The market is growing. Could you give us a sense of where you expect the market growth to come from in the future? Why are peptides so interesting in the treatment of diseases, for instance.

Raymond De Vré:
Peptides are naturally occurring biological molecules found in living organisms. Over recent years, significant progress has been made in developing new peptides and there's a great deal of science that's showing that you can use peptides for all kinds of therapeutic areas and medical indications – many more than people would have thought possible or even imagined a few years ago. Measured in terms of number of products in the pipeline, metabolic disorders are not the most common, contrary to what you might expect. The fastest-growing number of therapeutic areas at the moment are in fact in oncology. Peptides are also being used in gastrointestinal indications, in immunology, and also for indications related to the central nervous system. We are working with several partners on peptide-based therapies for Parkinson's, for instance.

Overall, we expect the peptide-based drug market to grow by 7%. Part of the reason for the growing number of therapeutic areas is that it's now possible to design peptides, which also means that we are manufacturing peptides that are more complex. Market research suggests that we can expect on average between five and ten new peptides to be introduced every year over the next two to four years. Some of those will be big volume products, others will be niche products. That's good news for us as a CDMO, because it gives us a balanced portfolio we can rely on for stability, no matter what direction the market takes.

EY:
Aside from your new Swiss headquarters here in the region of Zug, you currently have six manufacturing sites in three continents. How will you serve the growing market in the future? Are there any plans to open a manufacturing site here in Switzerland?

Raymond De Vré:
Last year, we spent 27% of our revenue on CapEx – a significant number. And we expect it to be more than 25% this year as well. That's all investment in growth – in various upstream and downstream processes aimed at increasing capacity. For the time being, at least for the foreseeable future, we don't need a new site, as we have plenty of space in our current sites to increase capacity. Luckily, it's more efficient to retrofit or replace old equipment with larger equipment or to add additional capacity at existing sites because you already have the people there, you already have the facilities, you already have the permits and the general infrastructure.

EY:
Where do you see the role of Switzerland as a business location in your growth strategy?

Raymond De Vré:
Our listing made it possible for us to secure close to CHF 200 million in cash, which allows us to keep a clean balance sheet and gives us flexibility. If we were able to substantially increase CapEx last year without being overly concerned about cash,

it's because of that. The efficient access to capital here in Switzerland allows us to be more flexible and to accelerate our CapEx globally.

Another important factor is the proximity to innovation we get by being based here. There's a huge amount of innovation in peptide chemistry in the sense of optimization. And you need to invest in that. It's not straightforward – it's complex. I always say to people, realize that we are talking about a chemical reaction that can involve hundreds of steps and take 9 to 12 months. It's not a one- or two-day affair.

There's a reason why we have personalities at our Board of Directors with experience in our industry and connections to the world of innovation in Switzerland. They help us to access capabilities that would otherwise be harder to reach. Innovation is key in our industry – there are lots of things happening in the world of drugs manufacturing in general. We are already making oligonucleotides right now and further related technologies will evolve. Being based in Switzerland gives us an array of options, whether it's access to innovation, access to people, access to customers. Switzerland is one of the best places in the world to run a pharma or biotech business.

> "We are investing in growth.

EY:
Why did you decide to establish your headquarters in the canton of Zug specifically?

Raymond De Vré:
Well, let's be clear, we have no operations in Switzerland and therefore do not benefit from tax benefits or other tax incentives here. An important criterion for our decision was the low administrative burden of setting up a listed entity here. We had no entity in Switzerland before and we only set it up right before the IPO, so we didn't want any unexpected setbacks. To get that right you need to have a constructive relationship with the authorities. In that sense, it was simply a pragmatic decision. We went where it was easiest to do business.

Raymond De Vré, born 1968 in Belgium, joined the PolyPeptide Group on 1 April 2021 and became the company's CEO on the day of its listing on 29 April 2021. He previously served as a member of the Management Committee and as Senior Vice President, Head of Biologics and Senior Vice President Global Business Operations and Strategy, Biologics at Dr. Reddy's Laboratories (DRL), a multinational pharmaceutical company. Before starting his tenure at DRL, Mr. De Vré was a consultant and later Partner of McKinsey & Company where he advised companies in the areas of generics, pharmaceutical, biotech and specialty chemicals across multiple geographies, especially Europe, the United States and India. Mr. De Vré holds a PhD in Applied Physics from Stanford University, California and a Master's Degree in Engineering from Université Libre de Bruxelles.

Switzerland: a dynamic biotech ecosystem

3.3 New funds of CHF billion raised

2021 was the second-best year ever in Switzerland for financing transactions, irrespective of the ongoing pandemic crisis. The funds stemmed from a number of sources:

- Many companies benefited from the Federal and Cantonal Covid-19 programs aimed at supporting the investments made in Covid-related research as well as softening some of the economic repercussions of the pandemic
- SIX saw its first biotech IPO since 2018
- 75.4% of the new capital investments were obtained by public companies, down slightly on the prior year when listed companies collected a share of 78.3%

More than 17,000 employees in R&D

Demand for R&D employees remains high as many Swiss biotechs seek to strengthen their R&D efforts, with some leading players looking to expand their global sales footprint.

Regulatory approvals remain at high level

The number of new product approvals around the world remains high as health authorities fast-track reviews and approve new applications in response to the steady need for new drugs to address worldwide demand, including some still untapped application areas.

Source: Swiss Biotech Report 2022, EY

Record investment in R&D of CHF 2.6 billion
Total R&D spending rose steeply on the back of the best-ever financing year in 2020 and as a result of R&D efforts in a broad range of diseases (including supporting the global fight against Covid-19).

Sales increase substantially
Total revenue in 2021 increased by CHF 1.8 billion to CHF 6.7 billion, mainly driven by an increase in product sales, collaboration and licensing deals as well as a general advancement of the product pipeline and, in turn, the high level of regulatory approvals.

94%

Life sciences index up 94%
In the five-year period from January 2017 to December 2021, SXI Biotech+Medtech outperformed the corresponding Nasdaq indices.

109 CHF billion

Swiss life sciences

Swiss life sciences exports reach record CHF 109 billion: In 2021, Swiss exports of pharmaceuticals, vitamins and diagnostics climbed to new heights, reaching CHF 109 billion (+9% on 2020) or 42% of total Swiss exports. Growth was especially strong in the immunologicals subsegment, which includes many biotech products, with an export value of CHF 45.8 billion (up 23.7%).

Patents

#1 in the Global Innovation Index

Switzerland has ranked first in the Global Innovation Index every year from 2011 to 2021. In the area of biotech patents, the country's otherwise modest IP portfolio in terms of size boasts a very high competitive impact thanks to a high market coverage and an exceptionally high technology relevance.

323

Total number of biotechs climbs to 323
Overall, the biotech sector continued to report net growth of companies in the 2021 financial year. As usual, some companies disappeared from the scene due to M&A activities and some companies ceased operations in 2021 and were subsequently liquidated, but many new companies emerged.

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