Swiss Biotech Report 2020

Jürg Zürcher and Michael Altorfer
April 21, 2020
Swiss biotech hub: A tight cross-functional network

- Cell culture
- Engineering
- Analytical
- Bio-IT
- CMO
- R&D
- Biotech consulting
- Non-biotech consulting
- Veterinary
- Therapeutics
- Food & industrial
- Medtech
- Diagnostics
- Agriculture
- Chemicals reagents
- Labware
- Bio-equipment

Swiss Biotech Hub

April 21, 2020
Swiss Biotech Report 2020: Continued sector growth

- Biotech industry generates revenues of CHF 4.8 billion in 2019, up from CHF 4.0 billion in 2018
- Over CHF 1 billion raised for private and public companies
- Licensing deals and collaborations boost revenues
- Gene therapy, AI and advanced biologics manufacturing emerging as additional strengths
- Over 40 new start ups set up in 2019
Life sciences account for 40% of Swiss exports
Pharma and biotech together CHF 97.5 bn in 2019
Emerging new strengths
Manufacturing of complex biologicals and exploitation of AI

- Biogen, CSL Behring, Novartis and Merck invest heavily in expanding production capacity
- Increasing number of complex biologicals and cell therapies gain approval
- AI being exploited by companies such as SOPHiA GENETICS, BC Platforms, Genedata, Insphero, GenomSys and SimplicityBIO
Artificial intelligence: Emerging business opportunities
Interviews with Jurgi Camblong, SOPHiA GENETICS and Axel Nemetz, IBM

• AI applications offer new business opportunities in healthcare

• SOPHiA GENETICS and IBM represent two complementary examples

• Both develop globally applicable solutions based on smart interpretation of standardized large data collections

• Their business models do not rely on specific drugs or cell based therapies but rather on the ability to provide information on who can benefit best from certain medical treatment options

• Thus, development processes can be faster, more cost effective and targeted to patient groups that benefit most
Switzerland # 1 in innovation and competitiveness

<table>
<thead>
<tr>
<th>Country</th>
<th>INSEAD Global Innovation Index</th>
<th>IMD World Competitiveness Ranking</th>
<th>WEF Global Competitiveness Index</th>
<th>UNDP Human Development Index</th>
<th>World Happiness Report</th>
<th>Total Aggregate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switzerland</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td>2</td>
<td>6</td>
<td>18</td>
</tr>
<tr>
<td>Netherlands</td>
<td>4</td>
<td>6</td>
<td>4</td>
<td>10</td>
<td>5</td>
<td>29</td>
</tr>
<tr>
<td>Sweden</td>
<td>2</td>
<td>9</td>
<td>8</td>
<td>8</td>
<td>7</td>
<td>34</td>
</tr>
<tr>
<td>Denmark</td>
<td>7</td>
<td>8</td>
<td>10</td>
<td>11</td>
<td>2</td>
<td>38</td>
</tr>
<tr>
<td>USA</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>16</td>
<td>19</td>
<td>43</td>
</tr>
<tr>
<td>Finland</td>
<td>6</td>
<td>15</td>
<td>11</td>
<td>12</td>
<td>1</td>
<td>45</td>
</tr>
<tr>
<td>Norway</td>
<td>19</td>
<td>11</td>
<td>17</td>
<td>1</td>
<td>3</td>
<td>51</td>
</tr>
<tr>
<td>Singapore</td>
<td>8</td>
<td>1</td>
<td>1</td>
<td>9</td>
<td>34</td>
<td>53</td>
</tr>
<tr>
<td>Germany</td>
<td>9</td>
<td>17</td>
<td>7</td>
<td>4</td>
<td>17</td>
<td>54</td>
</tr>
<tr>
<td>Ireland</td>
<td>12</td>
<td>7</td>
<td>24</td>
<td>3</td>
<td>16</td>
<td>62</td>
</tr>
<tr>
<td>Canada</td>
<td>17</td>
<td>13</td>
<td>14</td>
<td>13</td>
<td>9</td>
<td>66</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>5</td>
<td>23</td>
<td>9</td>
<td>15</td>
<td>15</td>
<td>67</td>
</tr>
</tbody>
</table>

April 21, 2020
Wide array of patents intersecting AI & biotechnology

AI generated Semantic Sunburst graph

- Overlap between AI and biotechnology yields 3,163 patent families
- Patents spread across a wide array of discipline
- From microbiology and polymorphisms to “information” and “computation”
Winning portfolio: Almost 50% of Swiss patents combining AI with biotechnology classify as world class
The year in figures

The 2019 data in the following slides is based on information that was available up until April 3 when this report was compiled and went to press. At this time, some of the companies had not yet disclosed their financial figures for 2019. Therefore some figures were carefully extrapolated on the basis of the latest interim data publicly available (i.e. Q3 or Q4 2019)
Rising number of biotech companies in Switzerland
Evolution 2009-2019

Source: EY
Rising number of Swiss biotech employees
Evolution 2017-2019

Source: Annual Reports, website information and EY
Capital investment in Swiss biotech companies
Public and private

Source: EY (Capital investments include convertible bonds)

April 21, 2020
Distribution of private and public capital investments
Across Swiss regions 2017-2019 (in CHF million)
Swiss Biotechs raised a total of CHF 1.2 billion
Almost even split between public and private companies

2019 public rounds

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>CHF MILLION</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRISPR Therapeutics AG (Zug)</td>
<td>433</td>
</tr>
<tr>
<td>AC Immune (Lausanne)</td>
<td>50</td>
</tr>
<tr>
<td>Obseva (Geneva)</td>
<td>25</td>
</tr>
<tr>
<td>Auris Medical (Zug/Bermuda)</td>
<td>8</td>
</tr>
<tr>
<td>Biocartis (Lausanne/Mechelen)</td>
<td>64</td>
</tr>
<tr>
<td>Polyphor (Allschwil/Basel)</td>
<td>6</td>
</tr>
<tr>
<td>Santhera (Pratteln/Basel)</td>
<td>22</td>
</tr>
<tr>
<td>Addex &amp; Relief Therapeutics (Geneva)</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>614</strong></td>
</tr>
</tbody>
</table>

Major 2019 private transactions

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>CHF MILLION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sophia Genetics (Lausanne)</td>
<td>76</td>
</tr>
<tr>
<td>ADC Therapeutics (Lausanne)</td>
<td>101</td>
</tr>
<tr>
<td>Polyneuron (Basel)</td>
<td>29</td>
</tr>
<tr>
<td>Anokion (Lausanne)</td>
<td>40</td>
</tr>
<tr>
<td>Oculus (Lausanne)</td>
<td>16</td>
</tr>
<tr>
<td>Other</td>
<td>316</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>577</strong></td>
</tr>
</tbody>
</table>
Revenues, R&D expenses & profit/loss liquidity
Total Swiss biotech companies

Source: Annual Reports, website information and EY
Revenues, R&D expenses & profit/loss liquidity
Publicly traded Swiss biotech companies

Source: Annual Reports, website information and EY
Revenues, R&D expenses & profit/loss liquidity
Privately held Swiss biotech companies

Source: EY
SIX operates the infrastructure for the Swiss financial center, exchange services, financial information and banking services
SXI Bio + MedTech Index on SIX
Outperforms Swiss Performance Index (SPI) by 38% and NASDAQ Biotechnology by 46% in 5 years to Jan 2020

Source: FactSet, Feb-20

April 21, 2020
Comparative indices volatility and returns
SXI Bio + Medtech risk & return profile for 2019
The Swiss Biotech Association has launched Swiss Biotech Success Stories to celebrate those who have made significant contributions to the industry. Dedicated to scientists, pioneers, entrepreneurs, innovators and supporters who led the way, opened the horizon and prepared the ground for lasting achievements. Swiss Biotech Success Stories accentuate past industry highlights and act as motivator for future achievements.
Award winners 2020

• Actelion
• Debiopharm
• Helsinn
• Venturelab
• >>venture>>
• Venture Kick
• Prof. Werner Arber, nobel price laureate
Laureates nominated for the Success Stories Award in 2021