

## European Molecular Biology Laboratory EMBL

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<b>Scientific area:</b>	Life Sciences (Molecular Biology)
<b>Host country:</b>	Germany, France, Italy, Spain, UK
<b>Infrastructure type:</b>	Multi site
<b>Dutch node or similar:</b>	n/a
<b>Established:</b>	1974
<b>The Netherlands member since:</b>	1974
<b>Phase:</b>	Operational

### Duration of agreement

Ongoing

### Terms of withdrawal

After the Agreement has been in force for six years, a State Party to the Agreement may, subject to the provisions of paragraph (3) b) of Article VI of the Agreement denounce it by giving notification to that effect to the Government of Switzerland. Such denunciation shall take effect at the end of the following financial year.

### Access to facilities

Open to member states

### Access to data

Open to everyone

### User definition

EMBL has altered and expanded the definition of 'a user' from the 2016 survey in several ways to highlight EMBL's multifaceted services across each of EMBL's sites and the high demand for both experimental and data services. EMBL's experimental services prioritise and serve the member state scientific community, while EMBL's open access data services are free for anyone in the world to access. For the purposes of this survey, answers pertaining to experimental and data service users are given separately for each question.

Experimental service users: In this survey, a user of EMBL's experimental services is defined as someone who uses EMBL experimental services and does not have a formal affiliation to EMBL. Experimental users predominantly visit the site, or in some cases mail in their sample, to access the service infrastructure at that site. EMBL's experimental services as of 2020 are listed in the complementary contribution document.

Data service users: In this survey, a user of EMBL's data services is defined as the total number of unique hosts (IP addresses) that visit EMBL-EBI websites each year. The number of IP addresses is an indication of the number of users, but is not an exact count. Sometimes an entire organisation uses a single IP address, while almost all users have multiple IP addresses. Because our data resources are open, meaning users don't need to sign in, it is incredibly difficult to estimate the exact number of users, but the number of IP's is a useful indicator.

### Description

Founded in 1974, EMBL is Europe's flagship laboratory for the life sciences – an intergovernmental organisation with more than 110 independent research groups covering the spectrum of molecular biology. It operates across six sites: Heidelberg, Barcelona, Hamburg, Grenoble, Rome and EMBL-EBI Hinxton. EMBL is a multifaceted, distributed intergovernmental research organisation which conducts research, provides scientific services and training, and engages in technological transfer, as well as helps shape European science policy for the benefit of its member states. EMBL is funded by public research money from more than 27 member states, including much of Europe and Israel, one associate member, Australia, and two prospect members, Estonia and Latvia.

### Financial details

<b>Mean Dutch membership over 5 year period (€K):</b>	5007
<b>Mean Dutch share of contribution over 5 year period (%):</b>	4,7

Year	NL membership (k€)	NL Contribution (% of total)	Total membership (k€)	Total expenditure (k€)	Turn-over (k€)
2016	4918	4.7	105663	235000	235000
2017	5075	4.8	105035	235000	235000
2018	5039	4.8	104528	247000	247000
2019	5081	4.8	106560	267000	267000
2020	4921	4.5	108233	277000	277000

### Employee statistics

	Female	Male	Other	Total
Total*	789.7	1001	n/a	1790.7
Of which Dutch	0	0	n/a	190.9

(2019, FTE – Full Time Equivalents)

\*EMBL has provided data for experimental services and data services. Both are included in this factsheet.

### Use of the infrastructure

#### User information [Experimental services]

Year	Number of users		Dutch share of users
	NL	Other countries	
2016	53	2160	2.5
2017	42	2233	1.9
2018	32	2361	1.4
2019	8	1528	0.5

#### Type of users

n/a

#### Comments by the RI

The decreased number of users in 2019 takes into account the shutdown of the beamlines in Grenoble, for the ESRF upgrade programme to develop a world-leading, fourth-generation synchrotron, the ESRF Extremely Brilliant Source. EMBL user statistics are not collected to reflect gender division hence only total is presented. The type of user information is not currently recorded by EMBL experimental services.

#### User information [Data services]

Year	Number of users		Dutch share of users
	NL	Other countries	
2016	378.926	27.259.345	1.4
2017	214.891	20.273.516	1.1
2018	239.987	19.518.564	1.3
2019	284.808	23.662.716	1.2

#### Type of users

n/a

#### Comments by the RI

Data for 2016 is inflated due to a number of complex factors, including the rollout of a new internet protocol (which resulted in many more IPs becoming available to internet users) and changes in how internal metrics are recorded. For these reasons, data from 2016 to data from 2017 should not be compared. EMBL user statistics are not collected to reflect gender division hence only total is presented. Data provided is the total number of unique hosts (IP addresses) that visited EMBL-EBI for each year. The number of IP addresses is an indication of the number of users, but not an exact count. Sometimes an entire organisation uses a single IP address, while almost all users have multiple IP addresses. Because our data resources are open, meaning users don't need to sign in, it is incredibly difficult to estimate the exact number of users, but the number of IPs is a useful indicator.

Because our data resources are open, meaning users don't need to sign in, it is difficult to estimate type of user. The data provided is from our annual surveys of our institutional mailing list (average of 2015-2019 surveys). This data may be subject to sampling bias. "N/A" category encompasses "Other" users who do not fit in with the provided categories. No country-specific data is available for this type of user.

#### **Application information [Experimental services]**

Given the multi-faceted and diverse number of experimental services, not all services record the number of applications/requests to use EMBL's experimental services, therefore, this table is left blank.

#### **Application information [Data services]**

Users do not need to apply or request to use EMBL's data services as they are openly accessible on the internet.

#### **Sample request information [Experimental services]**

EMBL experimental services do not have samples which can be requested by users. Please see the complementary contribution document for further information regarding EMBL's experimental services.

#### **Sample request information [Data services]**

EMBL data services do not have samples which can be requested from users. Please see the complementary contribution document for further information regarding EMBL's data services.

#### **Data request information [Data services]**

Year	Number of data requests	
	NL	Other countries
2016	145.972.491	9.709.027.509
2017	462.198.064	13.407.801.936
2018	761.525.516	22.598.474.484
2019	370.044.844	22.624.9551.156

#### *Comments by the RI*

Data service users request data sets from EMBL's biomolecular databases either by direct access via a web browser or programmatically. Data provided is the total number of web requests. A request is defined as any time a user or computer algorithm asks for information on our web pages, retrieving datasets from either an entire webpage or just a single piece of information from an EMBL-EBI data resource. Data provided is total number of web requests. A request is defined as any time a user or computer algorithm asks for information on our web pages, retrieving datasets from either an entire webpage or just a single piece of information from an EMBL-EBI data resource. Users do not need to apply or request to use EMBL's data services as they are openly accessible on the internet.

#### **Data request information [Experimental services]**

EMBL experimental data services do not have data which can be requested from users. Please see the complementary contribution document for further information regarding EMBL's experimental services.

#### **Contributions provided by organisations or companies in the participating countries**

Even though, EMBL does receive donations from companies and philanthropic organisations EMBL's operations do not rely on in-kind contributions from its member states nor from companies. Member state contributions and competitive research funding constitute the bulk of the EMBL budget.

#### **Total sum spent on other deliveries such as equipment, services and consumables**

Please see the complementary contribution document for more details.

#### **Income from user fees**

User fees are only applicable to certain experimental services; however they only recover actual costs of the experiment and do not bring any income to EMBL.

## **Additional questions to the RI**

### **What is the Dutch contribution to the RI?**

A significant collaboration link between the Dutch research community and EMBL is the partnership established between EMBL and the Hubrecht Institute in 2016. EMBL DG Edith Heard is a Member of the Scientific Advisory Board of the Hubrecht Institute. This partnership realises the potential for uniting the complementary strengths in the field of stem cell and tissue biology. EMBL is an attractive employer for Dutch nationals -19, 9 Dutch members of personnel in 2019 (expressed in FTE). The Dutch research community is among the most active participants at EMBL Courses and Conferences, which allows for cross-fertilization of ideas and exploring new cooperation opportunities. In the years 2016-2019, EMBL researchers have completed 116 joint publications and 86 joint grants with scientists from the Netherlands, demonstrating the high level of productive collaboration. Importantly, the Erasmus Medical Center and the National Institute of Public Health of the Netherlands have been valued contributors to developing the COVID-19 Data Platform, spearheaded by EMBL-EBI and enabling free data sharing and access to most recent data on the novel coronavirus disease. In the period 2016-2019, EMBL's tech transfer company EMBLEM had 4 service agreements with different Dutch entities. EMBL and Dutch research institutes are partners in several ESFRI projects, including ELIXIR, EuroBioImaging and INSTRUCT.

### **Currently, are there any RI's that provide similar kinds of research infrastructure and services as yours in the world?**

EMBL is unique as it is the only intergovernmental organisation for the life sciences in Europe and beyond. To the best of our knowledge, no other organisation in the world offers EMBL's combination of services - from biomolecular databases through various core facilities to structural biology beamlines. In addition, researchers from the member states have an unprecedented opportunity to access a large number of activities at EMBL, benefit from EMBL's state-of-the-art research facilities and specialised training, and actively participate in the development of new opportunities for innovative science and challenging research projects. In recognition of its value to international science, the Group of Senior Officials of G7 enlisted EMBL as a research infrastructure of global interest.

### **What are the overlaps and what are the main differences? To which extent do you cooperate or compete?**

EMBL builds relations across many European institutions and key European Research Organisations. EMBL collaborates extensively with various RI's and research organizations globally and especially in Europe. EMBL further promotes its relationships with institutions in EMBL member states, including EMBL's successful network of partnerships with other centres of scientific excellence. EMBL researchers extensively collaborate with fellow scientists: in 2019 over 540 of EMBL's publications and over 130 active grants were in collaboration with organisations and institutes in member states. Simultaneously, EMBL drives innovative science, as testified by 37% success of ERC grant applications from EMBL scientists, compared to an average of 13%. EMBL also partners with industry in large-scale public private research collaborations, such as Open Targets, which have led to publications and data platforms that further industry-driven questions. EMBL's Corporate Partnership Programme (CPP) and EMBL-EBI Industry Programme facilitates cooperation with the life sciences industry sector.

### **What are the RI's major educational and outreach activities?**

Training and inspiring the next generation of leading scientists is one of EMBL's key missions. EMBL is one of the major European training centres for life sciences, at multiple levels. Benefits to the member states include:

- EMBL International PhD Programme: around 200 predoctoral students per year are enrolled in the Programme;
- The EMBL Postdoctoral and Interdisciplinary Postdoctoral (EIPD) Programme: EIPD has been co-funded by the European Commission's Marie Skłodowska-Curie Actions since 2009. The newest version of the programme, EIPD4, will fund approximately 60 postdoctoral researchers for up to three years. (from 2020 on);
- A new fellowship programme, ARISE, was recently launched to train engineers and technology developers to become research infrastructure scientists and leaders;
- Courses and conferences across sites and in member states: in 2019 EMBL organised around 750 events with over 100,000 participants;
- Visitors Program: EMBL also promotes scientific excellence through its Scientific Visitor Programme which provides opportunities for visiting scientists and students to benefit from new technologies and state-of-the-art equipment in EMBL laboratories and core facilities, with approximately 600 visitors per year;

- ELLS: shares the scientific explorations of EMBL through inspiring educational and outreach activities with teachers and learners of many different backgrounds from member states and beyond;
- EMBL-EBI training events: offer world-leading bioinformatics training courses to academia and industry researchers.