Press Conference
President of JST

May 23, 2019

Japan Science and Technology Agency

Today's Topics

Ⅰ A case study of “cancer research”

- Changes in the world ranking of Japan in the share of highly cited papers (top 10%).
- The number of papers in “cancer and immune” and cancer related molecular biology field.

Ⅱ Research trends based on evidence

Part I. Grasping AI research trends by top-conference proceedings.

- Comparing the number of presentations by the selected countries
- Identifying Japanese research institutes based on the author information

Part 2. Identifying emerging topics by citation and page view count analysis

- Highly cited papers: Research Front and Hot paper provided by Clarivate Analytics
- Page view vs Citation: topic prominence provided by Elsevier

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Toward evidence-based funding strategy

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Mission of Evidence Team

- Identifying emerging topics to be funded
- Collecting and providing evidence for funding strategy
- Developing new methods for identifying emerging topics

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A case study of “Cancer research”

--Based on “World ranking of Japan in the share of highly cited papers (top 10%) by research subjects”--

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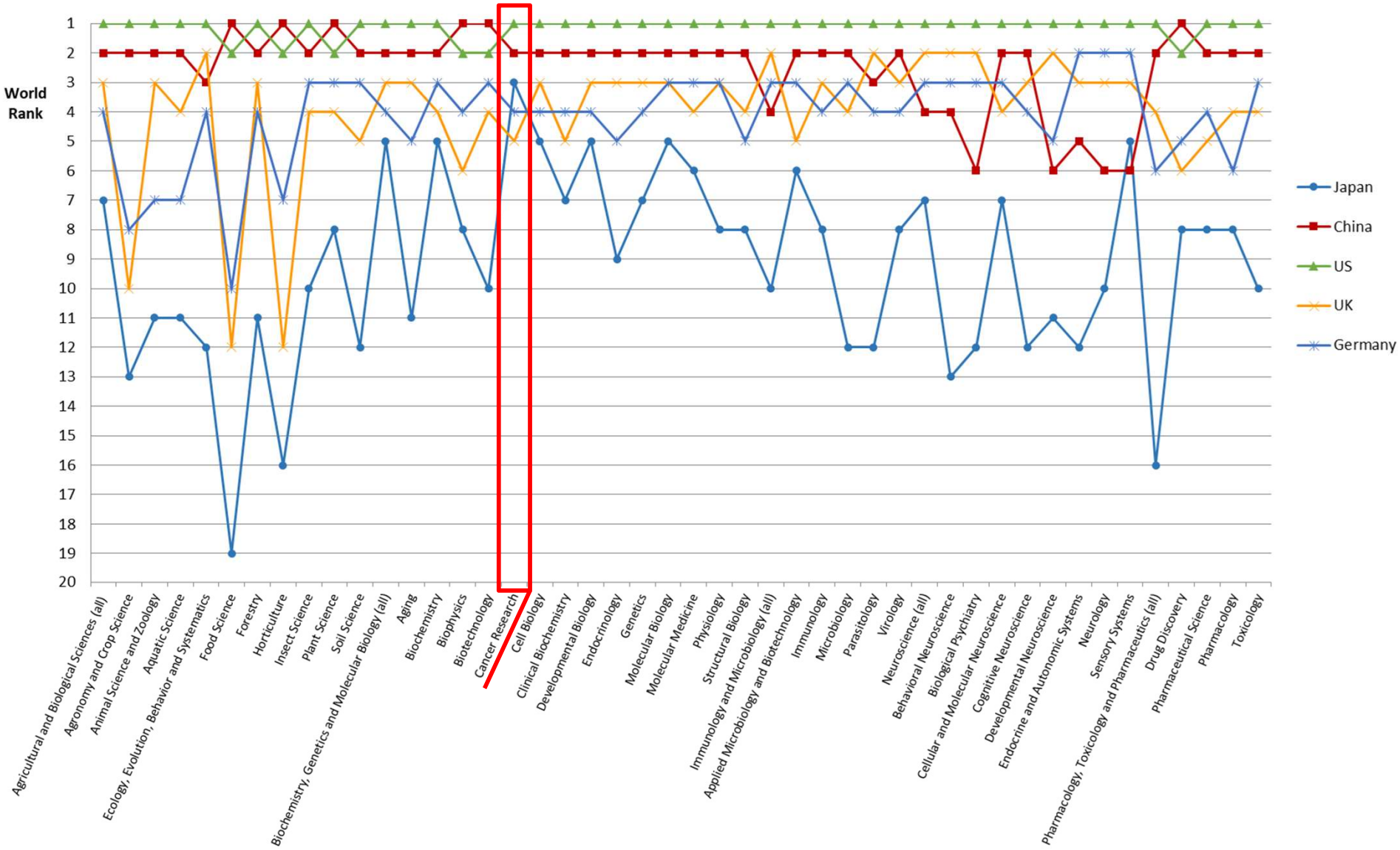
World ranking of selected five countries in terms of the share of highly cited papers (top 10%) based on fractional counting (Life Science: PY 2015-2017)

* PY = Publication Year



Source: Aggregated by the JST based on the Scopus custom data (Elsevier Co., Ltd.)

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Changes in the world ranking of Japan in the share of highly cited papers (top 10%)
-18 research areas ranked in the top 5 on PY 2015–2017 average-

Research Area	World rank of Japan in share of highly cited papers (top10%)				
	1995-1997(PY) (average)	2000-2002(PY) (average)	2005-2007(PY) (average)	2010-2012(PY) (average)	**2015-2017(PY)** (average)
Biochemistry	5	4	4	7	**5**
Biochemistry, Genetics and Molecular Biology (all)	2	2	2	5	**5**
Cancer Research	2	2	3	5	**3**
Cell Biology	3	3	4	4	**5**
Developmental Biology	4	3	4	5	**5**
Molecular Biology	3	3	4	5	**5**
Sensory Systems	6	4	5	4	**5**
Engineering (all)	2	3	5	6	**5**
Catalysis	2	2	3	3	**4**
Colloid & Surface Chemistry	2	2	2	3	**3**
Chemistry (General)	2	2	3	4	**5**
Inorganic Chemistry	3	2	4	4	**5**
Organic Chemistry	2	2	3	4	**5**
Physical and Theoretical Chemistry	3	3	4	4	**5**
Electronic, Optical and Magnetic Materials	2	2	3	4	**5**
Polymers and Plastics	2	2	3	4	**4**
Physics and Astronomy (all)	3	3	3	4	**5**
Nuclear and High Energy Physics	4	3	3	4	**5**

Source: Aggregated by the JST based on the Scopus custom data (Elsevier Co., Ltd.)

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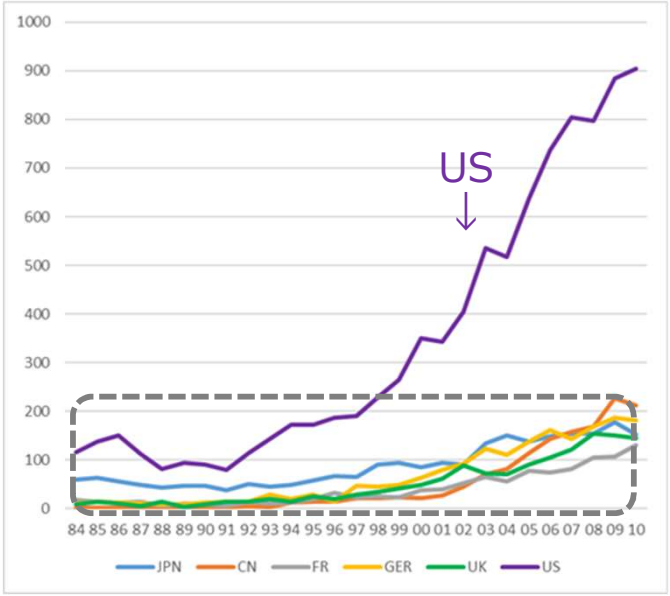
Number of papers related to “cancer and immunity”



zoom in

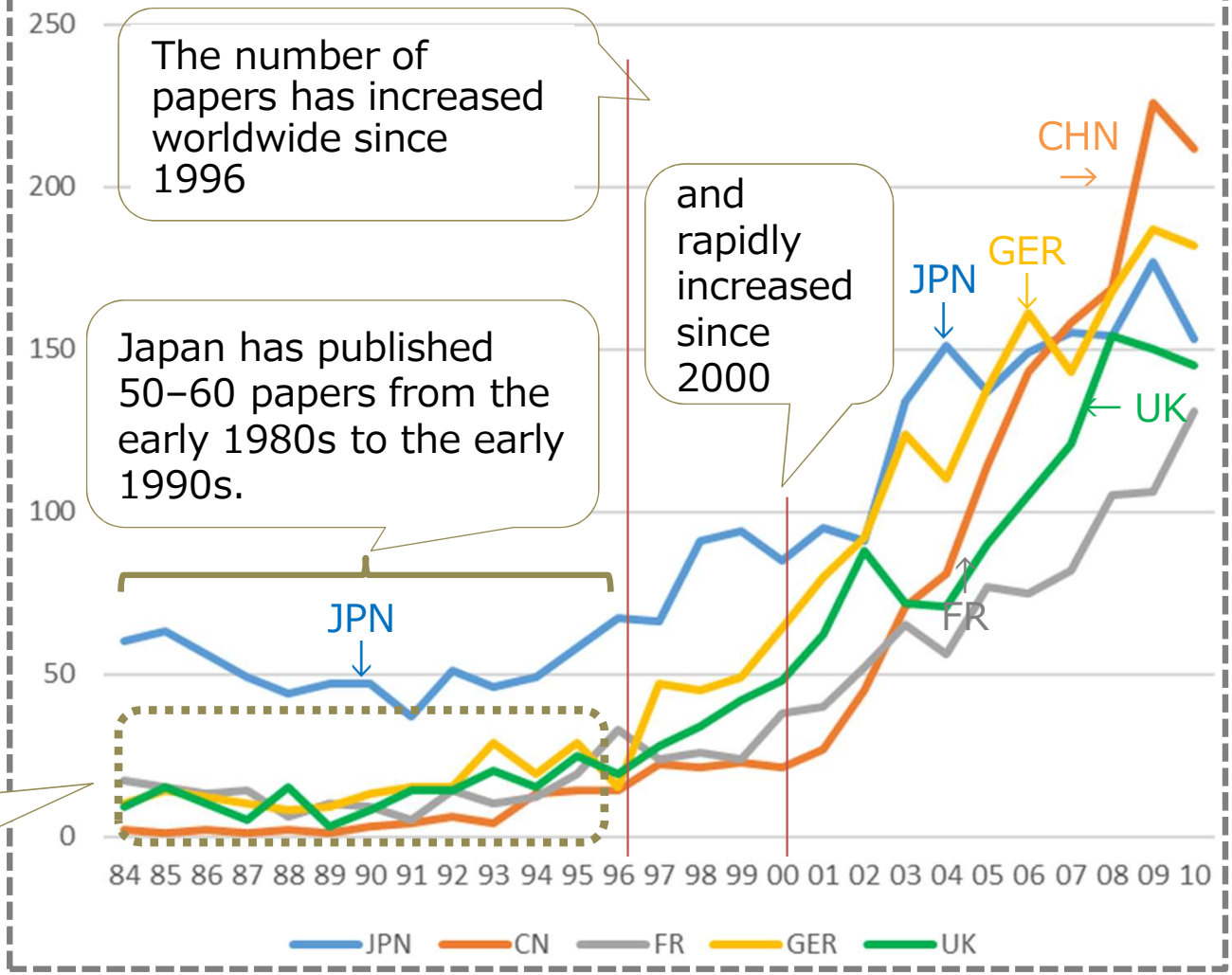
Number of papers including “cancer” and “immunity” in their titles, abstracts, and keywords.

The number of papers has increased worldwide since 1996

and rapidly increased since 2000

Japan has published 50–60 papers from the early 1980s to the early 1990s.

Only a few papers were published during the early 1990s compared with Japan.



Source: Aggregated by the JST based on the Scopus Web (Elsevier Co., Ltd.)

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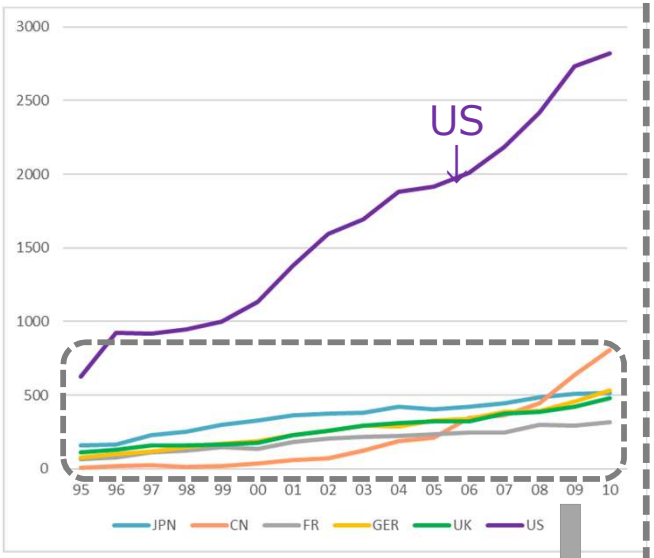
Number of “cancer” related papers in molecular biology field



zoom in

Number of papers in molecular biology including “cancer.”

The number of papers published in China has been dramatically increased since 2000.

The number of publication in Japan showed a steady increase compared with other countries.

Overtaken by China in 2008.

Caught up by Germany in 2010.

CN →

GER

← UK

JPN

FR

1800
1600
1400
1200
1000
800
600
400
200
0

95 96 97 98 99 00 01 02 03 04 05 06 07 08 09 10 11 12 13

JPN CN FR GER UK

Source: Aggregated by the JST based on the Scopus (Elsevier Co., Ltd.)

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Summary

■ **“cancer and immunity”:**

- The number of papers has been increasing since 1996 and more rapidly since 2000 in China, UK, Germany, and France.
- 50–60 papers were published in each year from the 1980s to the 1990s in Japan while only a few papers were published in the aforementioned countries.

■ **“cancer” related papers in molecular biology field:**

- Until 2008, more papers had been published in Japan than China, UK, Germany, and France.
- In China, only a few papers were published in 1995, but this number rapidly increased since 2000 and exceeded Japan in the late of 2000’s.
- Number of papers has been gradually increasing in UK, Germany, and France, and Germany caught up to Japan in 2010.

⇒ **In the 1980s–1990s, Japan led China, UK, and France in research on “cancer and immunity” and “cancer in molecular biology.”**

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