

研究报告

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2- 1	CRISPR		7
2- 2	2003-2022 CRISPR/Cas9		9
2- 3	CRISPR/Cas	TOP20	11
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CRISPR

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2020

CRISPR

CRISPR

Broad Institute

“ ”

Emmanuelle

Charpentier

“ CVC ”

2013

CVC

2022

2 28

USPTO

CRISPR

CVC

CVC

CRISPR

CRISPR

CRISPR

gene editing

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ZFNs

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2012

——CRISPR/Cas9

DNA

Science

CRISPR

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CRISPR/Cas9

2017

CRISPR/Cas9

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2020

Nature Medicine

[1] ”

CRISPR/Cas9

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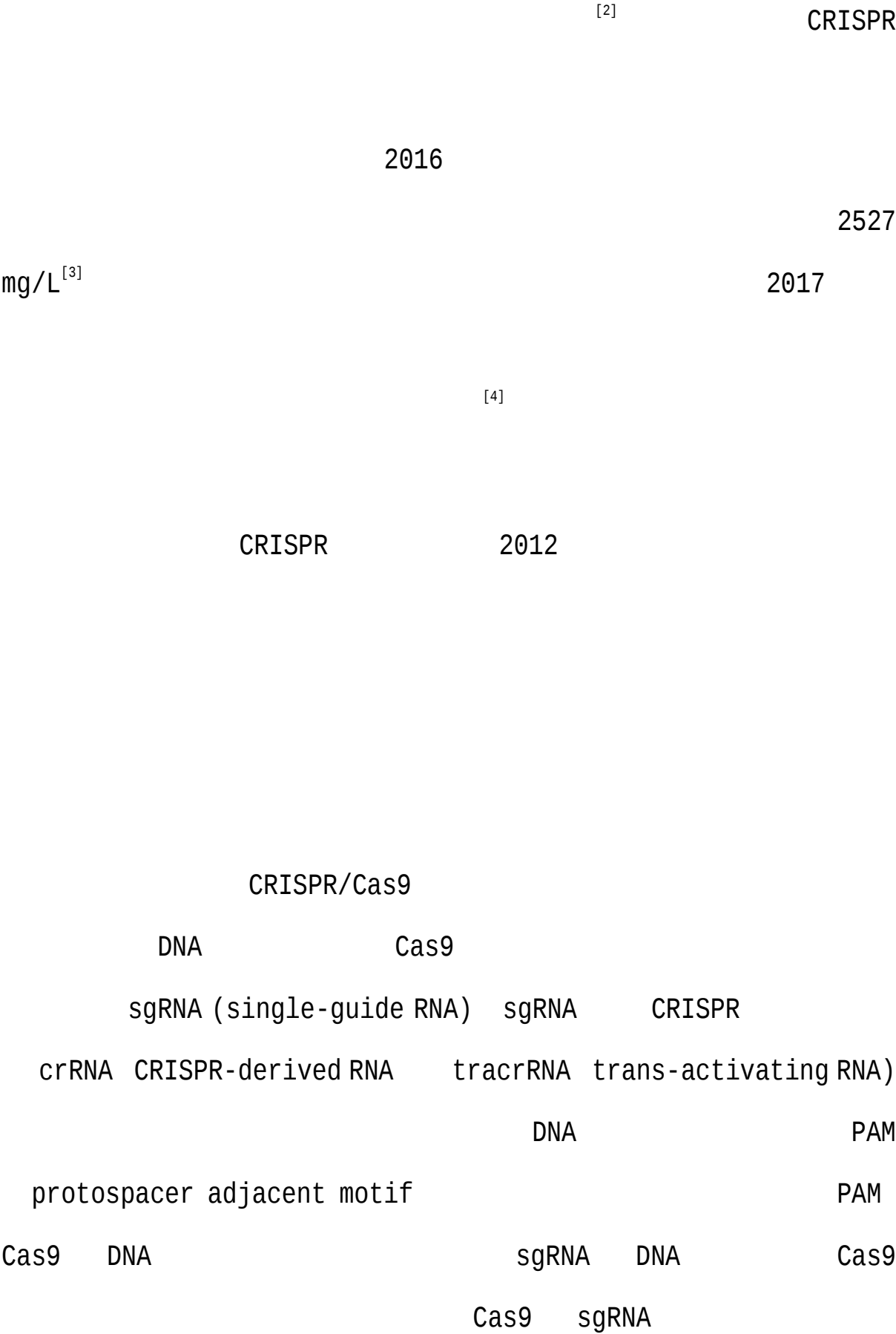
CRISPR Therapeutics

CTX001

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CRISPR/Cas9

β -



Emmanuelle Charpentier

Jennifer A Doudna

CRISPR

2020

CRISPR/Cas9

CRISPR

(clustered regularly interspaced short palindromic repeats

CRISPR)

1987

[5,6,7]

cas

Francisco Mojica

1993

Gilles Vergnaud

2005

Alexander Bolotin

2005

2012

Virginijus Siksnyis

——

CRISPR/Cas9

Cas9

crRNA

tracrRNA

[8]

Emmanuelle Charpentie

Jennifer A Doudna

CRISPR

Virginijus Siksnyis

crRNA

tracrRNA

RNA

RNA

sgRNA

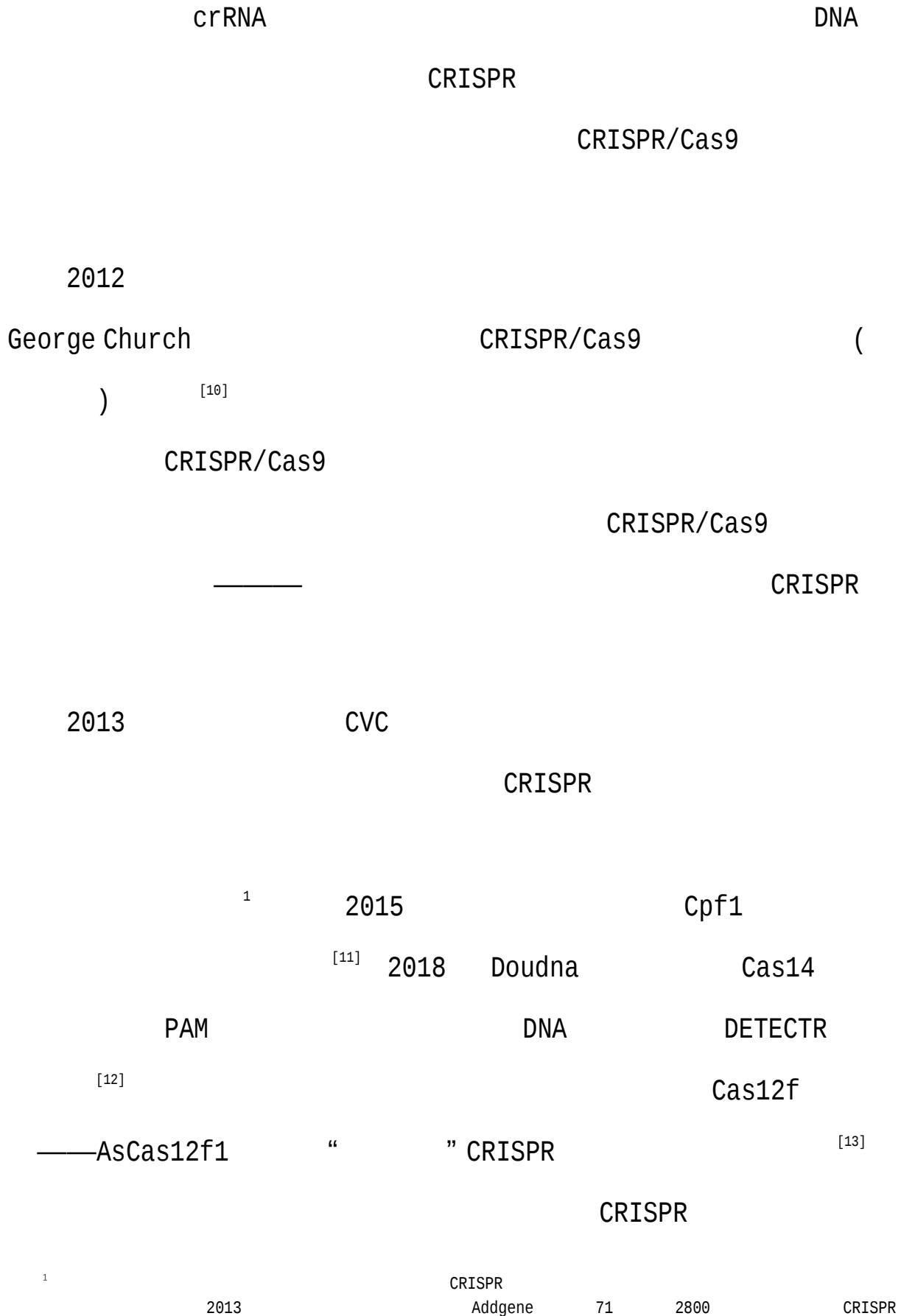
2012

CRISPR/Cas9

Cas9

Cas9

[9]



CRISPR/Cas

CRISPR

Cas

CRISPR



2-1 CRISPR

2020, 35(12):1510-1524 11

CRISPR/Cas9

27

Science

CRISPR/Cas9

CRISPR/Cas9

2. CRISPR/Cas9

CRISPR

2006 CRISPR/Cas9 2012

2012 CVC

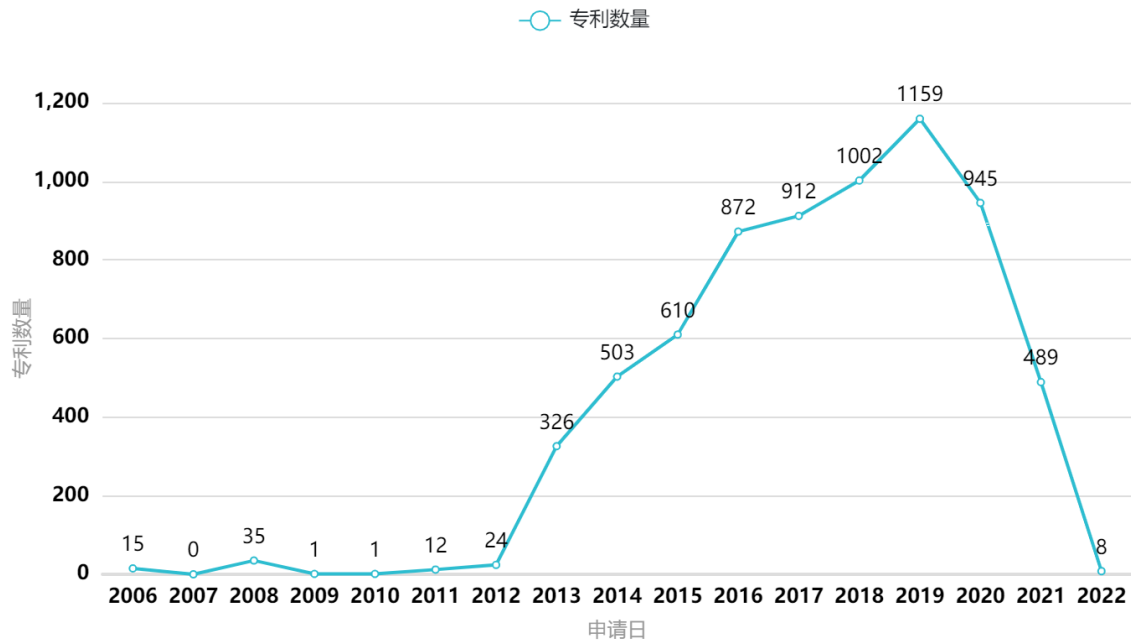
CRISPR

CRISPR/Cas9

2-2 2013-2016

89%^[15] 2019

incoPac 2 2022 3 6936



2-2 2003-2022 CRISPR/Cas9

incoPac 2022 3

4 Editas Medicine

-George Church 13 14 Caribou Biosciences

2 incoPat “ CRISPR/Cas ” 2022 3 31

CRISPR Therapeutics

CVC

Jennifer Doudna

Emmanuelle Charpentier

2-3

[15]

Editas Medicine

2-3

TOP10

Sigma-Aldrich

Regeneron

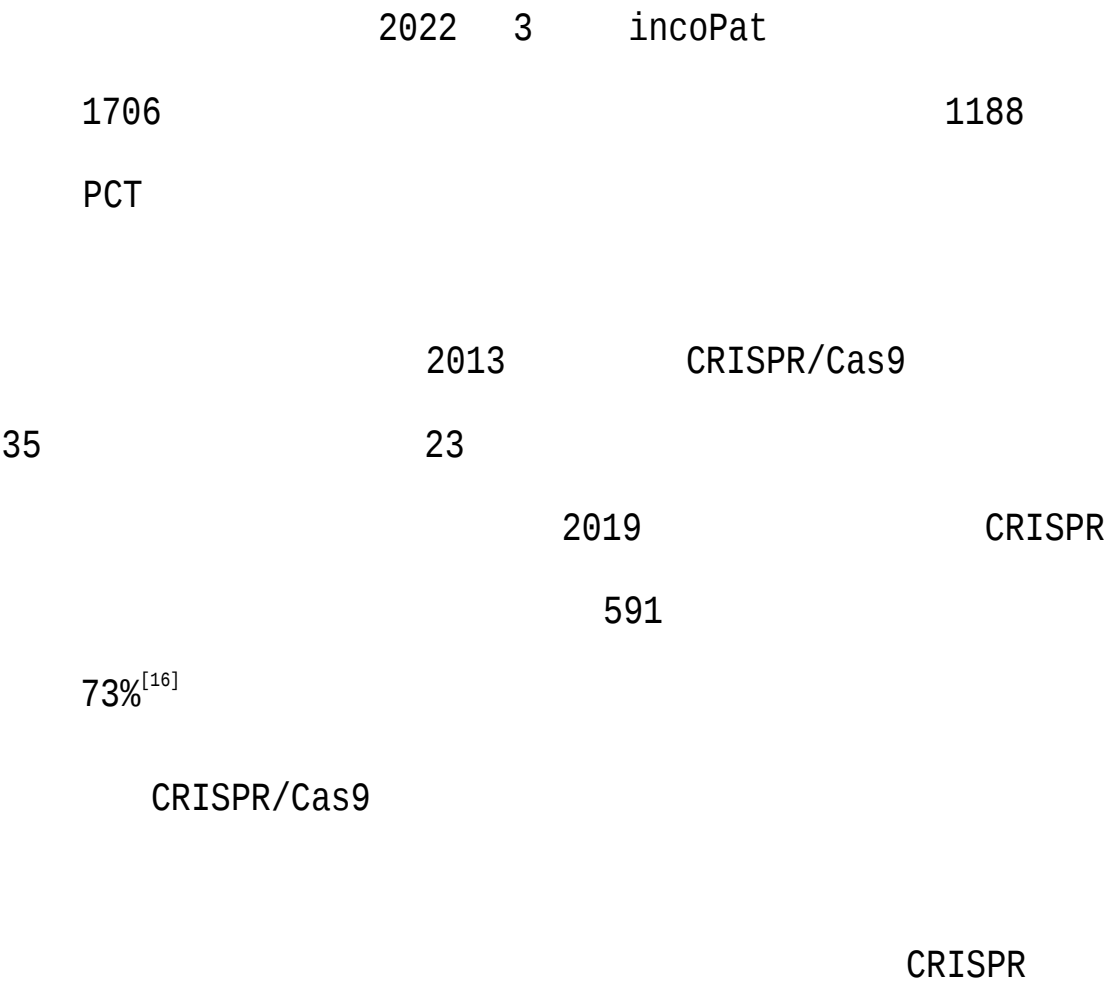
Pharmaceuticals

Pioneer Hi Bred

2021

CRISPR

[15]



A

CVC

CRISPR Cas9

2012 -2013

1.CVC

Emmanuelle Charpentier

Jennifer A.Doudna

(1) 发表论文

2012 8

Science

[17]

CRISPR Cas9

crRNA tracrRNA

Cas9

CRISPR Cas9

1 100

(2) 申请专利

2012

CVC

CRISPR/Cas9

cell-free

2017 5 13

2018 2 28

13/842859

2012 5 25

2013 3 15

2018 (9)] TJETQEMC /P ;

(1) 发表论文

2013	1	3	George Church		
			Science	[21]	CRISPR
					CRISPR

(2) 申请专利

2015	CRISPR/Cas9
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1.

2014	2015	CVC
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(1) 专利争议所涉及的法律依据

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16 “ ”

2013 3 16

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CVC

103

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CVC

(2) 争议焦点

CVC

cell-free

CRISPR/Cas9

CRISPR/Cas9

CVC

CVC

CVC 2015

USPTO

CRISPR/Cas9

(3) 最新裁决：张锋团队是一项新发明的先申请人

2022 2 28

CRISPR

CVC

CRISPR

CRISPR

CVC

2.

CVC

2012

2017

2019

(1) 专利争议所涉及的法律依据

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1985		
	12	
	12	()/6
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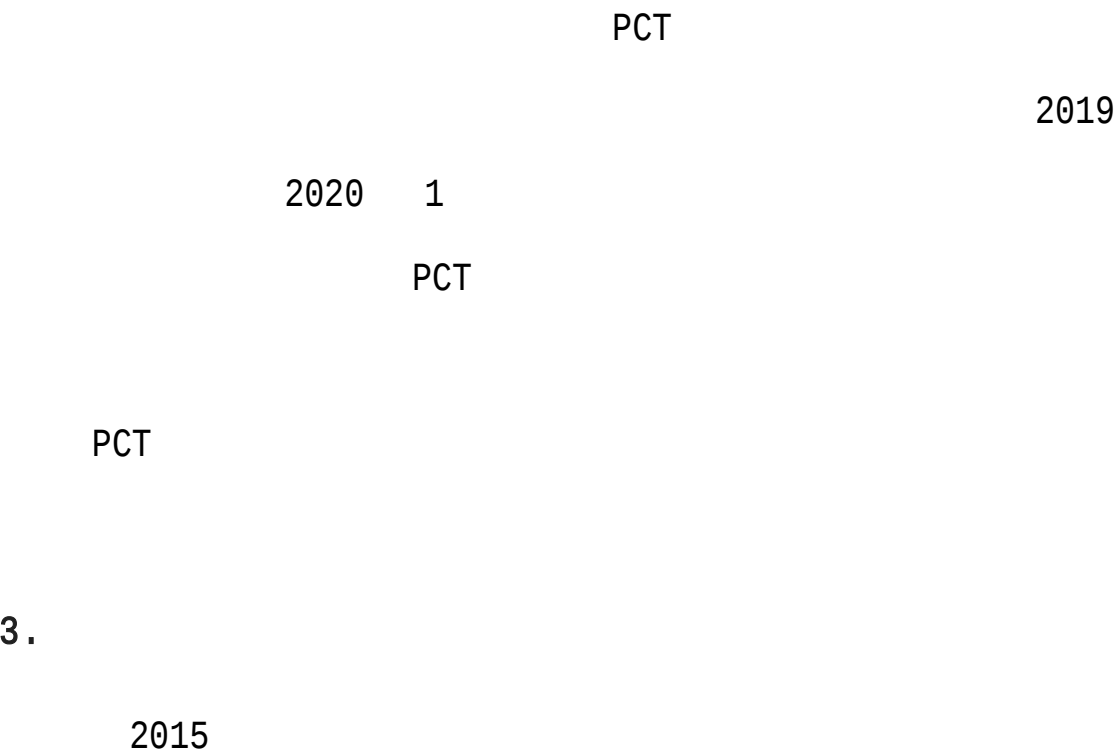
PCT

PCT Patent Cooperation Treaty

3-1

			PCT
		6	30
	12		
			PCT
			,

(2) 争议焦点



3-2

1			CVC	
2015	4		CVC	(United States Patent and Trademark Office, USPTO)
			“	/ (interference proceeding) ”
			CRISPR/Cas9	
2016	1	11	USPTO	CRISPR/Cas9
			CVC	
			1.	
			2. CVC	
2017	2	15	USPTO	CVC
			1. “	”
			2. “	” CRISPR/Cas9
			RNA	
			3.	“ ”,
2017	4		CVC	
2018	9		CVC	



- [illegible]

CRISPR

CRISPR

“

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2013 3 16

CRISPR

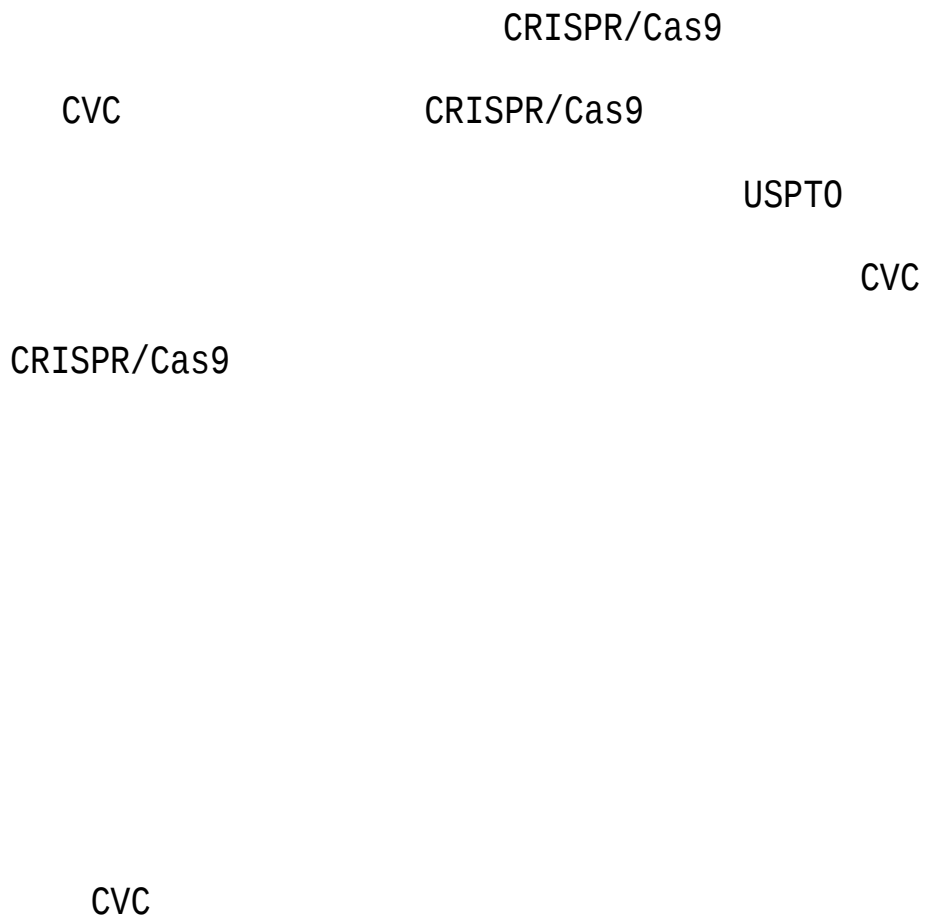
2012-2013

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PCT

Cpf1

Cas9



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TSINGHUA PBCSF
清华五道口

NIFR

国家金融研究院

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补充阅读：专利授权的法理原则

1. TRIPs

TRIPs Agreement on Trade Related Aspects of Intellectual
Property Rights

1993

TRIPs “

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TRIPs “

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