



研究报告

2023

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2020

CRISPR

CRISPR

NASDAQ

CRISPR

CRISPR



CRISPR



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CRISPR	1
() CRISPR	1
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CRISPR	5
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() CRISPR	6
()	9
.....	11
()	11
()	13
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.....	24
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()	25
.....	31



2-1	CRISPR/Cas	TOP20		2
2-2	CRISPR			3
3-1	CRISPR			6
3-2	CRISPR			10
2-1	2020	CRISPR		4
4-1				15
1	CRISPR			29



2022 5 114 CRISPR

CRISPR

CRISPR

CRISPR/Cas TOP20 ¹ 2-1

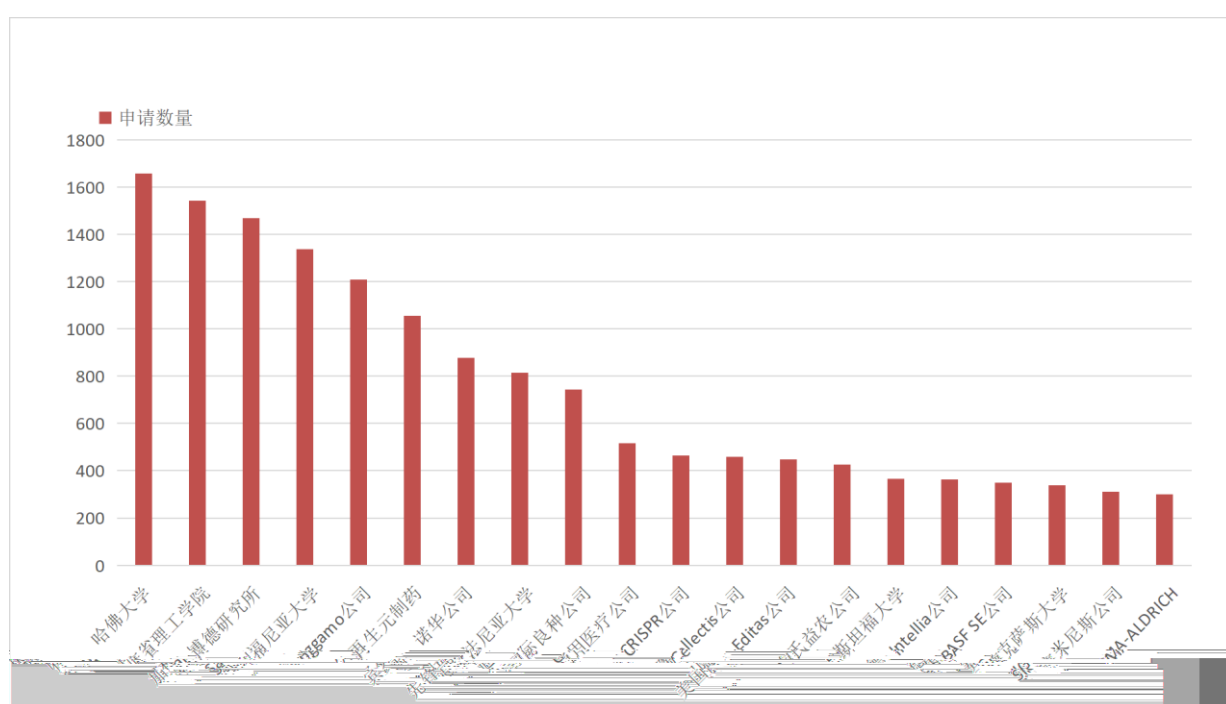
CRISPR

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TOP20

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CRISPR



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CRISPR/Cas

TOP20

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TOP20

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Sangamo CRISPR

Editas Intellia



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2013

Editas Medicine

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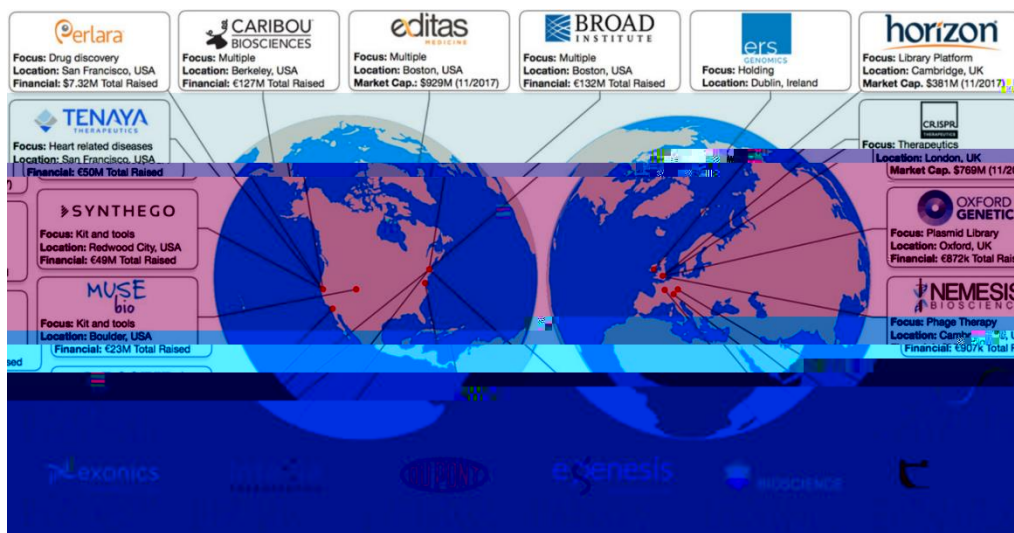
2-2

2018 7

CRISPR Editas Intellia

2-1

Horizon



2-2

CRISPR

J Ind Microbiol

Biotechnol. 2018 Jul;45(7):467-480. Fig. 5



clinicaltrials.gov

CRISPR

49

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16

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2020

Nature Medicine

CRISPR

2-1

2-1 2020 CRISPR

	/		/
CRISPR Therapeutics	Emmanuelle Charpentier	β -	CTX001 III FDA CRISPR Vertex
Beam Therapeutics		1. β - 2.	
Editas Medicine		CRISPR	EDIT-101: 10(LCA10) CRISPR



Intellia Therapeutics	Jennifer Doudna	hATTR	NTLA-2001 hATTR I NTLA-2002 HAE 1/2
Sherlock Biosciences		CRISPR	FDA
Mammoth Biosciences	Jennifer Doudna	CRISPR	
Excision BioTherapeutics	Jennifer Doudna		EBT-101 HIV IND

2023 3

CRISPR

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CRISPR “ ” CRISPR

Therapeutics (NASDAQ:CRSP) Editas Medicine (NASDAQ: EDIT)

Intellia Therapeutics NASDAQ:NTLA

CRISPR/Cas9

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² CRISPR



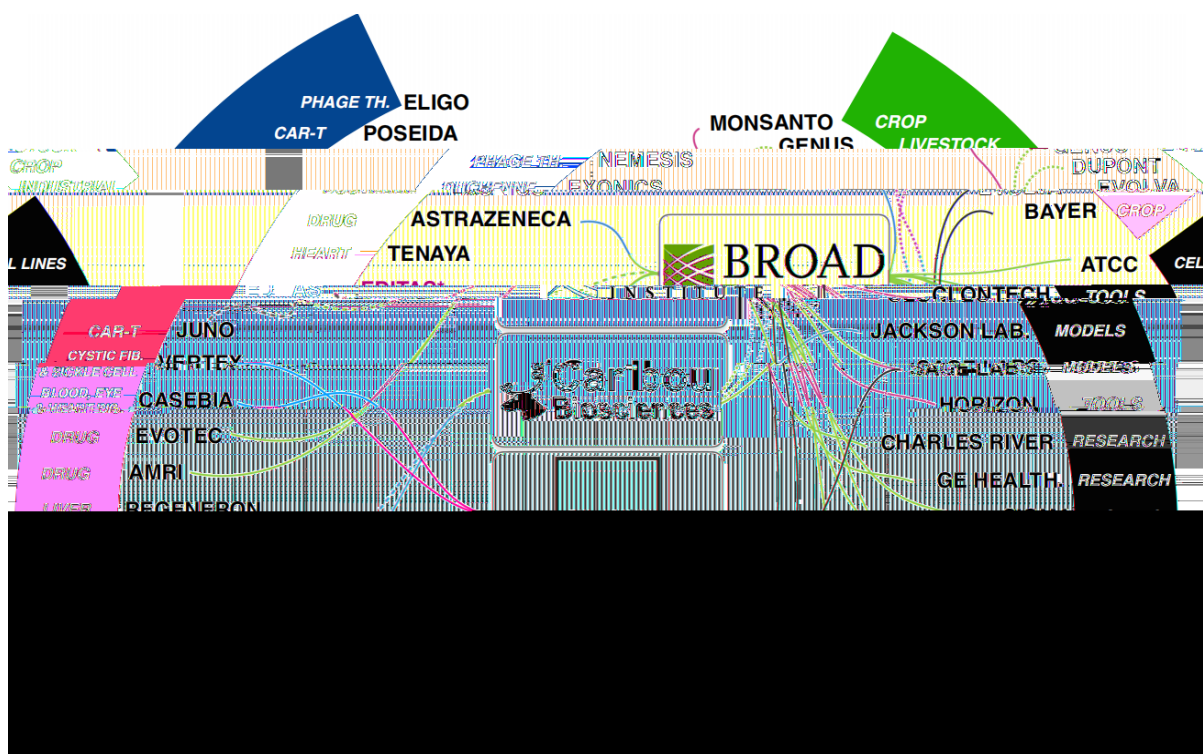
3-1 2018

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CRISPR



3-1 CRISPR

J Ind Microbiol

Biotechnol. 2018 Jul;45(7):467-480.Fig.4

CRISPR

Exclusive



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Non-Exclusive License

Sub-License

Cross License

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AstraZeneca Amri Evotec



3.

Juno, Novartis Cellectis T
Casebia
Oxford Genetics Intellia Therapeutics Jennifer Doudna
CRISPR
Caribou Biosciences ERS
genomics
Novartis, Regeneron Sage
Labs, The Jackson Laboratory Knudra
CRISPR Evolva
ERS Genomics

4.

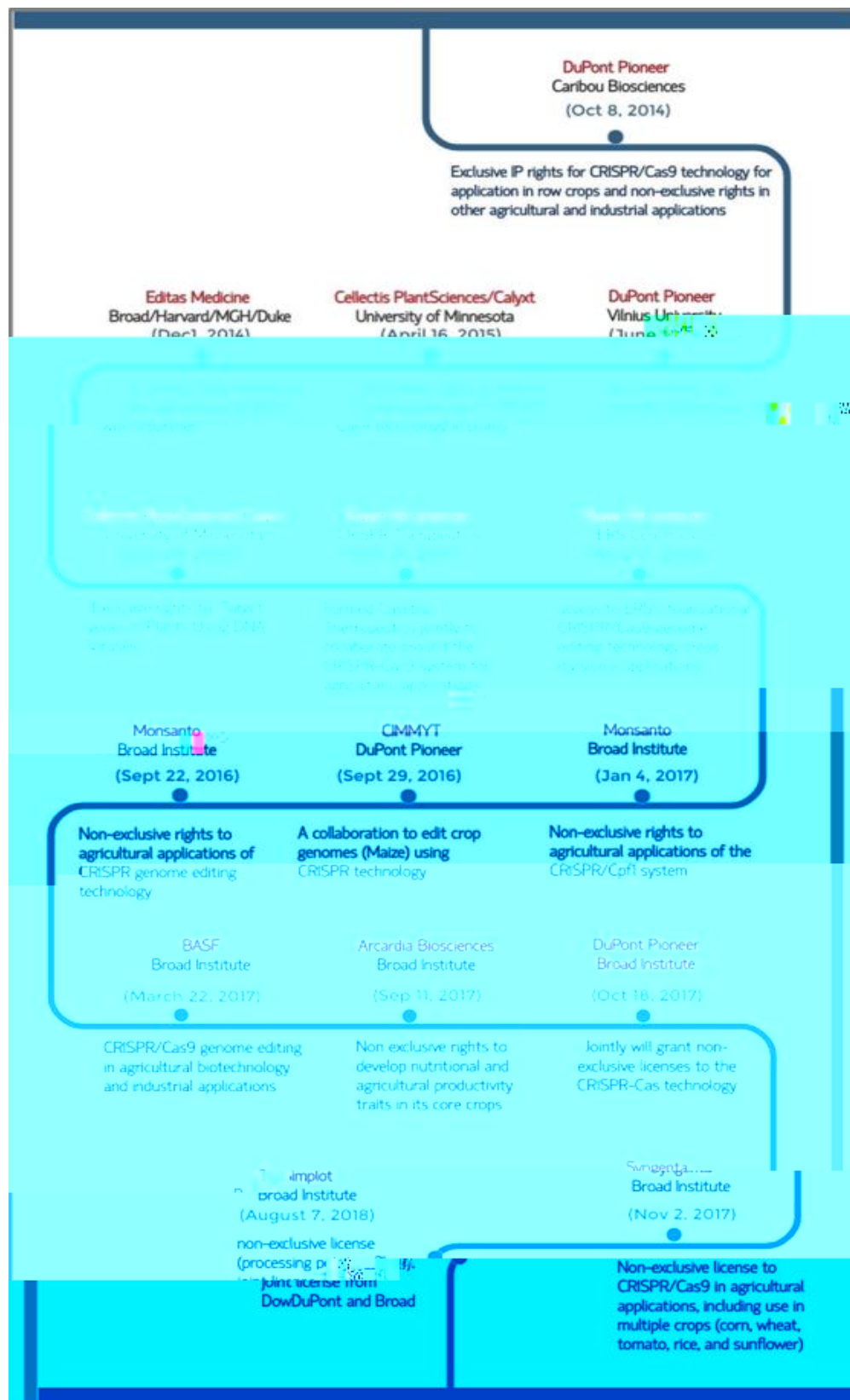


2017

CRISPR/Cas9

MPEG LA

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Transgenic

Res. 2021 Aug;30(4):585-599.Fig 1



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Bioscience

ERS Genomics

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CRISPR

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AstraZeneca Amri Evotec

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Biosciences

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Caribou

Jennifer

Caribou Biosciences

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FRAND

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CRISPR

2017

MPEG LA

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FEB/OL1. (2016 -03 -18) [2016- 04 -26].

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FRAND/RAND

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2013

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⁶ FRAND/RAND “ ” Standard-Setting Organization, SSO
“ ” Fair, Reasonable and Nondiscriminatory, FRAND “ ” Reasonable and
Nondiscriminatory, RAND
FRAND/RAND



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3.

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cn/tz/gz/201304/t20130408_790505.html.

EB/OL]. (2013-04-08 [2016-06-10]. <http://www.sipo.gov>.



1 CRISPR

Chinese PLA General Hospital	4
Children's Hospital of Fudan University	2
University of Pennsylvania	2
Affiliated Hospital to Academy of Military Medical Sciences	1
Capital Medical University	1
Central South University	1
Chinese University of Hong Kong	1
Eye & ENT Hospital of Fudan University	1
First Affiliated Hospital, Sun Yat-Sen University	1
Great Ormond Street Hospital for Children NHS Foundation Trust	1
Huashan Hospital	1
Jingchu University of Technology	1
Kafrelsheikh University	1
Masonic Cancer Center, University of Minnesota	1
Parker Institute for Cancer Immunotherapy	1
Peking University	1
Red Cross Hospital, Hangzhou, China	1
Sichuan University	1
The Affiliated Nanjing Drum Tower Hospital of Nanjing University Medical School	1
University College, London	1
University of California, Berkeley	1
University of California, Los Angeles	1
University of California, San Francisco	1
University of Massachusetts, Worcester	1



University of Siena	1
Wenzhou Central Hospital	1
Xijing Hospital	1
Chinese Medical Association	1
National Human Genome Research Institute (NHGRI)	1
National Institutes of Health Clinical Center (CC)	1

CRISPR Therapeutics	11
CRISPR Therapeutics AG	7
Vertex Pharmaceuticals Incorporated	4
Caribou Biosciences, Inc.	2
Editas Medicine, Inc.	2
Excision BioTherapeutics	2
Intellia Therapeutics	2
Intima Bioscience, Inc.	2
ViaCyte	2
Alllife Medical Science and Technology Co., Ltd.	1
Chengdu MedGenCell, Co., Ltd.	1
EdiGene (GuangZhou) Inc.	1
Graphite Bio, Inc.	1
ICON Clinical Research	1
MRI Global	1
Proof Diagnostics	1
Shanghai BDgene Co., Ltd.	1
Tmunity Therapeutics	1
Cure Rare Disease, Inc	1

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