

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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**THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, UNIVERSITY  
OF VIENNA, AND EMMANUELLE CHARPENTIER**

Applications 15/947,680; 15/947,700; 15/947,718; 15/981,807; 15/981,808;  
15/981,809; 16/136,159; 16/136,165; 16/136,168; 16/276,361; 16/276,365;  
16/276,368; 16/276,374; 16/136,175,

**Junior Party**

v.

**SIGMA-ALDRICH CO., LLC**

Application 15/456,204 ; Patents 10,731,181; 10,745,716

**Senior Party**

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Patent Interference No. 106,132

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**Redeclaration**

**37 C.F.R. § 41.203(c)**

- 1 Before DEBORAH KATZ, *Administrative Patent Judge*.
- 2 In light of the decision granting Motion 4 filed by Junior Party (“CVC”), the
- 3 interference is redeclared as follows. (*See Decision on Motions, Paper 834, 52:11–*
- 4 *62:4.*)

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1 Part E. Identification and order of the parties

2 Junior Party (“CVC”)

3 Application: 15/947,680, filed 6 April 2018

4 Application: 15/947,700, filed 6 April 2018

5 Application: 15/947,718, filed 6 April 2018

6 Application: 15/981,807, filed 16 May 2018

7 Application: 15/981,808, filed 16 May 2018

8 Application: 15/981,809, filed 16 May 2018

9 Application: 16/136,159, filed 19 September 2018

10 Application: 16/136,165, filed 19 September 2018

11 Application: 16/136,168, filed 19 September 2018

12 Application: 16/136,175, filed 19 September 2018

13 Application: 16/276,361, filed 14 February 2019

14 Application: 16/276,365, filed 14 February 2019

15 Application: 16/276,368, filed 14 February 2019

16 Application: 16/276,374, filed 14 February 2019

17 The named inventors on each of the involved CVC applications are:

18 Jennifer A. Doudna

19 Berkeley, CA

20

21 Martin Jinek

22 Berkeley, CA

23

24 Emmanuelle Charpentier

25 Braunschweig, GERMANY

26

27 Krzysztof Chylinski

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1 Vienna, AUSTRIA

2  
3 The assignees of each of the involved CVC applications are:

4 The Regents of the University of California and University of Vienna

5 The title of each of the involved CVC applications is:

6 Methods and Compositions for RNA-Directed Target DNA Modification  
7 and for RNA-Directed Modulation of Transcription

8  
9 Senior Party (“Sigma”)

10 Application: 15/456,204, filed 10 March 2017;

11 **Patent: 10,731,181, issued 4 August 2020 from application**

12 **15/188,911, filed 21 June 2016;**

13 **Patent: 10,745,716, issued 18 August 2020 from application**

14 **15/188,924, filed 21 June 2016.**

15 Named Inventors: Fuqiang Chen  
16 St. Louis, MO

17  
18 Gregory D. Davis  
19 St. Louis, MO

20  
21 The assignee of the involved Sigma application and patents is:

22  
23 Sigma-Aldrich Co. LLC

24  
25 The title of the involved Sigma application and patents is:

26 CRISPR-Based Genome Modification and Regulation  
27  
28

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1 Part F. Count and claims of the parties

2 Count 1

3 CVC Application 15/981,807, claim 156

4 or

5 Sigma Application 15/456,204, claim 31

6

7 CVC Application 15/981,807, claim 156 recites:

8 A eukaryotic cell comprising a target DNA molecule and an engineered  
9 and/or non-naturally occurring Type II Clustered Regularly Interspaced Short  
10 Palindromic Repeats (CRISPR)—CRISPR associated (Cas) (CRISPR-Cas)  
11 system comprising

12 a) a Cas9 protein, or a nucleic acid comprising a nucleotide sequence  
13 encoding said Cas9 protein; and

14 b) a single molecule DNA-targeting RNA, or a nucleic acid comprising a  
15 nucleotide sequence encoding said single molecule DNA-targeting RNA; wherein  
16 the single molecule DNA-targeting RNA comprises:

17 i) a targeter-RNA that is capable of hybridizing with a target sequence in the  
18 target DNA molecule, and

19 ii) an activator-RNA that is capable of hybridizing with the targeter-RNA to  
20 form a double-stranded RNA duplex of a protein-binding segment,

21 wherein the activator-RNA and the targeter-RNA are covalently linked to  
22 one another with intervening nucleotides; and

23 wherein the single molecule DNA-targeting RNA is capable of forming a  
24 complex with the Cas9 protein, thereby targeting the Cas9 protein to the target

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1 DNA molecule, whereby said system is capable of cleaving or editing the target  
2 DNA molecule or modulating transcription of at least one gene encoded by the  
3 target DNA molecule.

4

5 Sigma Application 15/456,204, claim 31 recites:

6 A method for modifying a chromosomal sequence in a eukaryotic cell by  
7 integrating a donor sequence, the method comprising introducing into the  
8 eukaryotic cell:

9 (i) a Clustered Regularly Interspersed Short Palindromic Repeats

10 (CRISPR)/CRISPR-associated (Cas) (CRISPR-Cas) type II protein linked to only  
11 one nuclear localization signal (NLS) or a nucleic acid encoding the CRISPR-Cas  
12 type II protein linked to only one NLS, wherein the CRISPR-Cas type II protein is  
13 a Cas9 protein, and the nucleic acid encoding the CRISPR-Cas type II protein is  
14 codon optimized for expression in the eukaryotic cell;

15 (ii) a guide RNA or DNA encoding the guide RNA, wherein the guide RNA  
16 comprises a first region that is complementary to a target site in the chromosomal  
17 sequence, which target site in the chromosomal sequence is immediately followed  
18 by a protospacer adjacent motif (PAM), and a second region that interacts with the  
19 CRISPR-Cas type II protein, and wherein the guide RNA comprises a crRNA and  
20 a tracrRNA; and

21 (iii) a donor polynucleotide comprising the donor sequence and upstream  
22 and downstream sequences;

23 wherein the guide RNA guides the CRISPR-Cas type II protein to the target  
24 site in the chromosomal sequence, the CRISPR-Cas type II protein introduces a

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1 double-stranded break at the target site, and repair of the double-stranded break by  
2 a DNA homology-directed repair (HDR) process leads to integration or exchange  
3 of the donor sequence into the chromosomal sequence.

4

5 The claims of the parties are:

6

CVC

7

Application 15/947,680 – Claims 156–185

8

Application 15/947,700 – Claims 156–185

9

Application 15/947,718 – Claims 156–185

10

Application 15/981,807 – Claims 156–185

11

Application 15/981,808 – Claims 156–170 and 172–185

12

Application 15/981,809 – Claims 156–170 and 172–185

13

Application 16/136,159 – Claims 156–184

14

Application 16/136,165 – Claims 156–184

15

Application 16/136,168 – Claims 156–184

16

Application 16/136,175 – Claims 156–184

17

Application 16/276,361 – Claims 3–31

18

Application 16/276,365 – Claims 3–32

19

Application 16/276,368 – Claims 3–31

20

Application 16/276,374 – Claims 3–32

21

Sigma

22

Application 15/456,204 – Claims 31–63

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1           **Patent 10,731,181 – claims 1–17**

2           **Patent 10,745,716 – claims 2–4, 11, 14, 21, 22**

3

4           The claims of the parties which correspond to Count 1 are:

5

6

CVC

7           Application 15/947,680 – Claims 156–185

8           Application 15/947,700 – Claims 156–185

9           Application 15/947,718 – Claims 156–185

10          Application 15/981,807 – Claims 156–185

11          Application 15/981,808 – Claims 156–170 and 172–185

12          Application 15/981,809 – Claims 156–170 and 172–185

13          Application 16/136,159 – Claims 156–184

14          Application 16/136,165 – Claims 156–184

15          Application 16/136,168 – Claims 156–184

16          Application 16/136,175 – Claims 156–184

17          Application 16/276,361 – Claims 3–31

18          Application 16/276,365 – Claims 3–32

19          Application 16/276,368 – Claims 3–31

20          Application 16/276,374 – Claims 3–32

21

Sigma

22          Application 15/456,204 – Claims 31–63

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1 **Patent 10,731,181 – claims 1–17**

2 **Patent 10,745,716 – claims 2–4, 11, 14, 21, 22**

3 The claims of the parties which do not correspond to Count 1, and therefore  
4 are not involved in the interference, are:

5 CVC

6 Application 15/947,680 – None

7 Application 15/947,700 – None

8 Application 15/947,718 – None

9 Application 15/981,807 – None

10 Application 15/981,808 – None

11 Application 15/981,809 – None

12 Application 16/136,159 – None

13 Application 16/136,165 – None

14 Application 16/136,168 – None

15 Application 16/136,175 – None

16 Application 16/276,361 – None

17 Application 16/276,365 – None

18 Application 16/276,368 – None

19 Application 16/276,374 – None

20 Sigma

21 Application 15/456,204 – None



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1           **Patent 10,731,181 – None**

2           **Patent 10,745,716 – None**

3

4           The parties are accorded the following earliest benefit dates for Count 1:

5   CVC

6           Provisional Application 61/757,640, filed 28 January 2013

7   Sigma

8           Provisional Application 61/734,256, filed 6 December 2012

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1           **Part G. Heading to be used on papers**

2           The following heading must be used on all papers filed in this interference,  
3 see SO ¶ 106.1.1:

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**Senior Party**

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Patent Interference No. 106,132

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1 No other provisions of the original Declaration are changed.

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