



CRISPR

Dr Michael Flower 11 09, 2017

Dr Ed Wild; Prof Woooseok Im
11 02, 2017

(Huntington)

'DNA (DNA surgery)'



DNA

DNA

4

" - A, T, G, C

**

DNA

DNA **



** huntingtin *

HD, CAG

huntingtin **

DNA

?

DNA

DNA ** nucleases"

** CRISPR

** 1990

DNA

CRISPR

. 2002, nucleases

DNA, Nucleases 'Cas' 2005

DNA



DNA

CRISPR Cas (CRISPR / Cas)

DNA

CRISPR, CRISPR, viral DNA, nuclease

DNA

, 2012 Jennifer Doudna Emmanuelle Charpentier

DNA

Cas

DNA

Cas nuclease



CRISPR Cas

CRISPR Cas DNA

DNA

CRISPR Cas

DNA

Cas . DNA Cas .

CRISPR / Cas . beta-thalassemia .

“

KamiCas9

4

”



'huntingtin' . huntingtin . antisense oligonucleotide (ASO)
' . ' . DNA .

DNA . CAG . CRISPR / Cas
DNA . CAG . HTT

■ ■ ■ ■ ■ CRISPR / Cas ■ ■ ■

CRISPR Cas DNA . cas nuclease DNA .

Cas Nuclease DNA . Cas “ ”

CRISPR / Cas DNA .

(University of Lausanne) (Nicole Déglon)

. HTT Cas

huntingtin CRISPR / Cas .
CRISPR Cas nuclease DNA . DNA

'KamiCas9' CRISPR Huntingtin .
. , huntingtin . , 4 .
4 Huntingtin . Cas nuclease



DNA .

Déglon



CAG

CAG

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