

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT	
NATURE OF CONVEYANCE:	ASSIGNMENT	
CONVEYING PARTY DATA		
	Name	Execution Date
	EUGENE KOONIN	04/26/2019
RECEIVING PARTY DATA		
Name:	THE UNITED STATES OF AMERICA, AS REPRESENTED BY THE SECRETARY, DEPT OF HEALTH AND HUMAN SERVICES	
Street Address:	6011 EXECUTIVE BLVD, STE 325, MSC 7660	
Internal Address:	NIH/OD/OIR/OTT	
City:	BETHESDA	
State/Country:	MARYLAND	
Postal Code:	20892-7660	
PROPERTY NUMBERS Total: 1		
	Property Type	Number
	Application Number:	17848563
CORRESPONDENCE DATA		
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DATE SIGNED:	07/29/2022	
Total Attachments: 3		
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**ASSIGNMENT FOR NIH/FDA/CDC INVENTIONS AIA
(NIH OR FDA OR CDC CO-INVENTORS – Jointly-Owned Inventions)**

WHEREAS, I/we,

1. Eugene Koonin, Kira S. Makarova; and Yuri I. Wolf, employees of the National Library of Medicine, National Institutes of Health,

a component of the United States Department of Health and Human Services having an address at the Office of Technology Transfer, National Institutes of Health, 6011 Executive Boulevard, Suite 325, MSC 7660, Bethesda, MD 20892-7660, have made certain inventions as described and claimed in:

1. PCT Patent Application PCT/US2016/038258, filed 6/17/2016, and which is entitled "Novel CRISPR Enzymes and Systems"; and
2. US Patent Application Number 15/844,530, filed 12/16/2017, and which is entitled "Novel CRISPR Enzymes and Systems";

all of which are collectively referred to as "**The Patent Application(s)**".

WHEREAS, we along with Feng Zhang, and others who are employees of various non-government entities are the inventor(s) named in **The Patent Application(s)**; and

WHEREAS, the inventions described and claimed in **The Patent Application(s)** were made under conditions such as to entitle **THE UNITED STATES OF AMERICA, as represented by the Secretary, Department of Health and Human Services** [hereinafter **THE GOVERNMENT**] under Executive Order 10096 and its amendments, 35 USC §§200-201, §§206-207, and §210 and 37 CFR Part 501 to the entire right, title, and interest in such inventions made by employees of a component of the United States Department of Health and Human Services; and

WHEREAS, THE GOVERNMENT is desirous of acquiring all domestic and foreign right, title, and interest in the inventions made by employees of a component of the United States Department of Health and Human Services which are described and claimed in **The Patent Application(s)**; and

NOW, THEREFORE, having the legal obligation to assign our right, title and interest in the inventions described and claimed in **The Patent Application(s)** to **THE GOVERNMENT**, having a place of business at the Office of Technology Transfer, National Institutes of Health, 6011 Executive Boulevard, Suite 325, MSC 7660, Bethesda, MD 20892-7660 and for consideration, the receipt and sufficiency of which are hereby acknowledged, I/we hereby assign and transfer to **THE GOVERNMENT**:

the entire right, title, and interest in and to any and all inventions described and claimed in **The Patent Applications** and any and all Letters Patent(s) which may be granted thereon, and any and all continuations, divisions, reissues or extensions thereof; and

all rights to claim priority on the basis of **The Patent Application(s)** including but not limited to applications filed through the provisions of the Patent Cooperation Treaty ("PCT Applications"); and

all applications for Letters Patent(s) that may be filed for any and all inventions described and claimed in **The Patent Application(s)** that may be filed in any foreign country and all Letters Patents that may be granted thereon in any foreign country and all extensions, renewals, and reissues thereof; and

any and all such Letters Patents as may be granted in the United States or any foreign country to be held by **THE GOVERNMENT** to the end of the term for which the same would have been held by the inventors had this assignment not been made.

I/we further agree to make, execute, and deliver to **THE GOVERNMENT**, upon request, any and all papers, documents, affidavits, or other instruments that may be necessary in the prosecution of any application or applications for improvements or reissues of Letters Patent, and to assist **THE GOVERNMENT** in every way as may be requested in protecting said invention.

The Patent Applications name inventors who are not employees of **THE GOVERNMENT**. This assignment is not effective with respect to any inventors of **The Patent Applications** who are not employees of **THE GOVERNMENT**.

IN WITNESS WHEREOF we subscribe our hands and seals on the dates shown below:

Inventor 1:	
<hr/>	Digitally signed by Eugene V. Koonin -S Date: 2019.04.26 16:13:41 -04'00'
Date	<hr/> Eugene Koonin
County of <hr/>	Ss:
State of <hr/>	
Subscribed and sworn to before me this ____ day of _____.	
[Seal]	<hr/>
	Notary Public for <hr/>
	My Commission Expires: <hr/>

Inventor 2:

_____	_____
Date	Kira S. Makarova
County of _____ Ss:	
State of _____	
Subscribed and sworn to before me this ____ day of _____.	
[Seal]	_____ Notary Public for _____ My Commission Expires: _____

Inventor 3:

_____	_____
Date	Yuri I. Wolf
County of _____ Ss:	
State of _____	
Subscribed and sworn to before me this ____ day of _____.	
[Seal]	_____ Notary Public for _____ My Commission Expires: _____