



**(Billing Code: 4150-31)**

**DEPARTMENT OF HEALTH AND HUMAN SERVICES**

**Office of the Secretary**

**Findings of Research Misconduct**

**AGENCY:** Office of the Secretary, HHS

**ACTION:** Notice.

**SUMMARY:** Findings of research misconduct have been made on the part of Shiladitya Sen, former graduate student, Department of Chemistry and Biochemistry, The Ohio State University (OSU). Mr. Sen engaged in research misconduct in research supported by National Institute of General Medical Sciences (NIGMS), National Institutes of Health (NIH), grant R01 GM083114. The administrative actions, including debarment for a period of three (3) years, were implemented beginning on May 16, 2018, and are detailed below.

**FOR FURTHER INFORMATION CONTACT:**

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Interim Director  
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**SUPPLEMENTARY INFORMATION:** Notice is hereby given that the Office of Research Integrity (ORI) has taken final action in the following case:

Shiladitya Sen, The Ohio State University: Based on the report of an investigation conducted by OSU and analysis conducted by ORI in its oversight review, ORI found that Mr. Shiladitya Sen, former graduate student, OSU, engaged in research misconduct in research supported by NIGMS, NIH, grant R01 GM083114.

ORI found that Respondent engaged in research misconduct by knowingly and intentionally falsifying and/or fabricating data reported in the following published paper, his Ph.D. thesis, a poster presentation, and his mentor's grant applications submitted to NIGMS, NIH:

- *PNAS* 110(11):4261-4266, 2013 (hereafter referred to as “*PNAS* 2013”); retracted in:  
*PNAS* 114(37):E7855, 2017 Sep
- Sen, S. “Engineering Proteins for Enhanced Stability using High-Throughput and Combinatorial Methods.” OSU Doctoral Dissertation, 2013 (hereafter referred to as “thesis”)
- poster presented at the Annual Symposium of the Protein Society in 2012 (hereafter referred to as “Poster 2012”)

- R01 GM083114 and R01 GM083114-A1

ORI found that Respondent knowingly and intentionally falsified and/or fabricated gene sequencing and high throughput thermal scanning (HTTS) data for sequence-stability relationship of Rop protein variants in nineteen (19) figures, ten (10) tables, and related text included in a poster presentation, his Ph.D. thesis, and two (2) NIH grant applications.

Specifically, Respondent knowingly and intentionally falsified and/or fabricated:

- unique sequences and stability data for 1017 active Rop variants in Table 3.1 and provided additional analyses purportedly from those active Rop variants in Table 3.2 and Figures 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, and 3.9 in his thesis and in Figures 6, 7, 17, and 20 in two (2) grant applications
- unique sequences and stability data for active Rop loop variants from four separate mutant libraries, X<sub>4</sub>, LX<sub>4</sub>, X<sub>4</sub>-I, LX<sub>4</sub>-I in Tables 5.2, 5.3, 5.4, and 5.5, respectively, and presented additional analyses purportedly from those active Rop loop variants in Figures 5.3, 5.4, 5.5, 5.6, and 5.9 and Table 5.1 in his thesis and in Figure 6 in two (2) grant applications
- figures entitled “analysis of more than 1000 active (folded) core variants,” “Loop Library: How does loop affect stability?” and “Detailed characterization of loop variants” in Poster 2012

- list of oligonucleotides included in Tables 9.2, 9.3, and 9.4 in his thesis

ORI also found that Respondent knowingly and intentionally falsified and/or fabricated HTTS data for thermodynamic effects of somatic mutation in antibodies 93F3 and OKT3 in ten (10) figures, two (2) tables, and related text included in *PNAS* 2013 and his thesis.

Specifically, Respondent knowingly and intentionally falsified and/or fabricated HTTS data:

- in Figures 6.2A, 6.2C, 6.3, and 6.6 and Tables 6.2 and 6.3 in his thesis
- also included as Figures 2A, 2C, S2, and S5 and Tables S3 and S4 in *PNAS* 2013

Mr. Sen entered into a Voluntary Exclusion Agreement and voluntarily agreed for a period of three (3) years, beginning on May 16, 2018:

- (1) to exclude himself voluntarily from any contracting or subcontracting with any agency of the United States Government and from eligibility for or involvement in nonprocurement programs of the United States Government referred to as “covered transactions” pursuant to HHS’ Implementation (2 C.F.R. Part 376) of OMB Guidelines to Agencies on Governmentwide Debarment and Suspension, 2 C.F.R. Part 180 (collectively the “Debarment Regulations”);

- (2) to exclude himself voluntarily from serving in any advisory capacity to PHS including, but not limited to, service on any PHS advisory committee, board, and/or peer review committee, or as a consultant.

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**Wanda K. Jones,**  
Interim Director,  
Office of Research Integrity.

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