Materials Design Analysis Reporting (MDAR) Checklist for Authors

The MDAR framework establishes a minimum set of requirements in transparent reporting applicable to studies in the life sciences (see Statement of Task: doi:10.31222/osf.io/9sm4x.). The MDAR checklist is a tool for authors, editors and others seeking to adopt the MDAR framework for transparent reporting in manuscripts and other outputs. Please refer to the MDAR Elaboration Document for additional context for the MDAR framework.

Materials

Antibodies	Yes (indicate where provided: section/paragraph)	n/a
For commercial reagents, provide supplier name, catalogue number and RRID, if available.	Page / Line: 9 / 195 - 215 section: Acquisition of data for case study paragraph: 1 Antibodies from AKLIDES Nuk HLCC CN: 2702421, Nuk Human Lymphocyte Complete Combi (4268) kit (Medipan, Germany)	

Cell materials	Yes (indicate where provided: section/paragraph)	n/a
Cell lines: Provide species information, strain. Provide accession number in repository **OR** supplier name, catalog number, clone number, **OR** RRID	Page / Line: 9 / 197 - section: Acquisition of data for case study paragraph: 1 HEp-2 cells (HEp-2 (ATCC® CCL-23™))	
Primary cultures: Provide species, strain, sex of origin, genetic modification status.		No primary cultures were used

Experimental animals	Yes (indicate where provided: section/paragraph)	n/a
Laboratory animals: Provide species, strain, sex, age, genetic modification status. Provide accession number in repository **OR** supplier name, catalog number, clone number, **OR** RRID		No Experimental animals were used
Animal observed in or captured from the field: Provide species, sex and age where possible		No Experimental animals were used
Model organisms: Provide Accession number in repository (where relevant) **OR** RRID		

Plants and microbes	Yes (indicate where provided: section/paragraph)	n/a
Plants: provide species and strain, unique accession number if available, and source (including location for collected wild specimens)		No plants were used

Microbes: provide species and strain, unique accession number if available, and source		No microbes were used

Human research participants	**Yes (indicate where provided: section/paragraph)**	**n/a**
Identify authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	The study is part of an ongoing research project. Albeit no human research participants were used we provide the ethics approval as Page Number: 16 Line Number: 384-387 Section and Paragraph: Ethical statement ethics committee of the Brandenburg University of Technology (BTU) Cottbus-Senftenberg, Cottbus, Germany [Ethikkommissionssatzung BTU, document number EK2018-3]	
Provide statement confirming informed consent obtained from study participants.		No material from tud y participants was used
Report on age and sex for all study participants.		No material from tud y participants was used

Design

Study protocol	Yes (indicate where provided: section/paragraph)	n/a
For clinical trials, provide the trial registration number **OR** cite DOI in manuscript.		This was not a clinical trial

Laboratory protocol	Yes (indicate where provided: section/paragraph)	n/a
Provide DOI or other citation details if detailed step-by-step protocols are available.	Page Number: 9 Line Number: 195-212 Section and Paragraph: Acquisition of data for case study DOI:10.3233/JCB-189006 DOI:10.21037/jlpm.2018.04.10	

Experimental study design (statistics details)	Yes (indicate where provided: section/paragraph)	n/a
State whether and how the following have been done**,** **or** if they were not carried out.	The study is a work on the evaluation of data. The statistical methods as well as the open source software are described in detail with source information. Section: Selection of the most appropriate distribution Model selection Empirical power summary	
Sample size determination		does not apply
Randomisation		does not apply
Blinding		does not apply
Inclusion/exclusion criteria		does not apply

Sample definition and in-laboratory replication	Yes (indicate where provided: section/paragraph)	n/a
State number of times the experiment was replicated in laboratory	Section: Empirical power analysis (page 8, lines 176 - 193) Acquisition of data for case study (page 9, lines 195 - 213)	
Define whether data describe technical or biological replicates	The data were generated from 10 biological replicates. Each data set consists of 1000 replications of samples with one of three possible sample sizes (= 50, 100, 200)	

Ethics	Yes (indicate where provided: section/paragraph)	n/a
Studies involving human participants: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.		does not apply
Studies involving experimental animals: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.		does not apply

Studies involving specimen and field samples: State if relevant permits obtained, provide details of authority approving study; if none were required, explain why.		does not apply

Dual Use Research of Concern (DURC)	**Yes (indicate where provided: section/paragraph)**	**n/a**
If study is subject to dual use research of concern, state the authority granting approval and reference number for the regulatory approval		The study is not subject to dual use research

Analysis

Attrition	**Yes (indicate where provided: section/paragraph)**	**n/a**
State if sample or data point from the analysis is excluded, and whether the criteria for exclusion were determined and specified in advance.		no data were excluded

Statistics	**Yes (indicate where provided: section/paragraph)**	**n/a**
Describe statistical tests used and justify choice of tests.	Section: Empirical power analysis (page 8, lines 176 - 193) Acquisition of data for case study (page 9, lines 195 - 213) - We implemented countfitteR as a framework for the selection of the underlying count distribution. Our software fits count data to four distributions that describe foci counts: Poisson, NB, ZIP and ZINB. The countfitteR framework selects the most appropriate model using the Bayesian Information Criterion (BIC) - the two-step distribution selection procedure (likelihood ratio test and the Vuong test)	

Data Availability	**Yes (indicate where provided: section/paragraph)**	**n/a**
State whether newly created datasets are available, including protocols for access or restriction on access.	page 17, lines 388 - 392 All data are available (open source / open data) License:GPL-3	
If data are publicly available, provide accession number in repository or DOI or URL.	Section: Availability and implementation The code to reproduce the analysis in this paper is available in the repository: https://github.com/biongram/countfitteR-simulations. The countfitteR web-server: http://biongram.biotech.uni.wroc.pl/countfitteR/ countfitteR R package: https://CRAN.R-project.org/package=countfitteR	
If publicly available data are reused, provide accession number in repository or DOI or URL, where possible.		does not apply

Code Availability	**Yes (indicate where provided: section/paragraph)**	**n/a**

For all newly generated code and software essential for replicating the main findings of the study:	All data are available (open source / open data) License:GPL-3 page 17, lines 388 - 392	
State whether the code or software is available.	Yes, the software is open source	
If code is publicly available, provide accession number in repository, or DOI or URL.	Section: Availability and implementation The code to reproduce the analysis in this paper is available in the repository: https://github.com/biongram/countfitteR-simulations. The countfitteR web-server: http://biongram.biotech.uni.wroc.pl/countfitteR/ countfitteR R package: https://CRAN.R-project.org/package=countfitteR	

Reporting

Adherence to community standards	**Yes (indicate where provided: section/paragraph)**	**n/a**
MDAR framework recommends adoption of discipline-specific guidelines, established and endorsed through community initiatives. Journals have their own policy about requiring specific guidelines and recommendations to complement MDAR.		
State if relevant guidelines (eg., ICMJE, MIBBI, ARRIVE) have been followed, and whether a checklist (eg., CONSORT, PRISMA, ARRIVE) is provided with the manuscript.	ICMJE guidelines were followed, as the journal follows ICMJE recommendations for publication	

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