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.	DNA extraction kits (TIANGEN, DP304-02); (Methods/ paragraph 5) EZ DNA Methylation-Gold Kit（ZYMO,D5005）; (Methods/ paragraph 3) cDNA synthesis kit(Yeasen, 11119ES60); (Methods/ paragraph 5) qPCR SYBR Green Master Mix(Yeasen ,11201ES08); (Methods/ paragraph 5)	

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	NO. Not applicable.	**n/a**
Primary cultures: Provide species, strain, sex of origin, genetic modification status.	NO. Not applicable.	**n/a**

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. Not applicable.	**n/a**
Animal observed in or captured from the field: Provide species, sex and age where possible	NO. Not applicable.	**n/a**
Model organisms: Provide Accession number in repository (where relevant) **OR** RRID	NO. Not applicable.	**n/a**

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. Not applicable.	**n/a**
Microbes: provide species and strain, unique accession number if available, and source	NO. Not applicable.	**n/a**

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.	Medical Ethics Committees of Nanfang Hospital, Southern Medical University (No. NFEC-2020-203).(Methods/ paragraph 1)	
Provide statement confirming informed consent obtained from study participants.	Before participating in this study, all subjects and their parents provided written informed consent. (Methods/ paragraph 1)	
Report on age and sex for all study participants.	All subjects were 6-year-old boys. (Methods/ paragraph 1)	

Design

Study protocol	Yes (indicate where provided: section/paragraph)	n/a
For clinical trials, provide the trial registration number **OR** cite DOI in manuscript.	No	**n/a**

Laboratory protocol	Yes (indicate where provided: section/paragraph)	n/a
Provide DOI or other citation details if detailed step-by-step protocols are available.	NO	**n/a**

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.		
Sample size determination	A total of 3 subjects completed sequencing. A pair of identical twins and an unrelated healthy donor. (Methods/ paragraph 1)	
Randomisation	NO	
Blinding	Our design belongs to the combination of clinical and basic medical research. It is not a general clinical prospective. (Methods/ paragraph 1)study. The selected samples are twin brothers.	
Inclusion/exclusion criteria	Patients diagnosed with juvenile myelomonocytic leukemia according to the guidelines were included in this study. (Methods/ paragraph 1)	

Sample definition and in-laboratory replication	Yes (indicate where provided: section/paragraph)	n/a
State number of times the experiment was replicated in laboratory	sample bone marrow blood DNA extraction for 3 times. (Methods/ paragraph 2)	
Define whether data describe technical or biological replicates	It is technical replicates. (Methods/ paragraph 2)	

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.	Medical Ethics Committees of Nanfang Hospital, Southern Medical University (No. NFEC-2020-203). (Methods/ paragraph 1)	
Studies involving experimental animals: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	NO	**n/a**
Studies involving specimen and field samples: State if relevant permits obtained, provide details of authority approving study; if none were required, explain why.	The study was approved by the Medical Ethics Committees of Nanfang Hospital, Southern Medical University (No. NFEC-2020-203). (Methods/ paragraph 1)	

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	NO	**n/a**

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 sample or data point from the analysis is excluded. (Methods/ paragraph 4)	

Statistics	Yes (indicate where provided: section/paragraph)	n/a
Describe statistical tests used and justify choice of tests.	1. A result was deemed to be statistically significant if the p-value was less then 0.05. (Methods/ paragraph 7) 2. 2−ΔΔCt method was used to quantify the relative expression levels of the genes of interest. (Methods/ paragraph 6)	

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.	The datasets generated and analyzed in the current study are available in NCBI database under accession number PRJNA720445.(Data Availability)	
If data are publicly available, provide accession number in repository or DOI or URL.	The datasets generated and analyzed in the current study are available in NCBI database under accession number PRJNA720445. (Data Availability) The gene expression data for the healthy control and JMML patient samples described herein were downloaded from the GEO under the accession numbers GSE71935 and GSE71449. (Results/ paragraph 5)	
If publicly available data are reused, provide accession number in repository or DOI or URL, where possible.	GSE71935 and GSE71449.(Results/ paragraph 5)	

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:		
State whether the code or software is available.	YES	
If code is publicly available, provide accession number in repository, or DOI or URL.	R studio, bio conductor.	

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.	

Article information: https://dx.doi.org/10.21037/tp-22-381