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: page)	n/a
For commercial reagents, provide supplier name, catalogue number and RRID, if available.	MTHFD2 (Abnova, #H00010797-M01), SHMT2 (Cell signaling, #37004; Atlas Antibodies, #HPA020549), MTHFD1 (Atlas Antibodies, #HPA001290), TYMS (Abcam, #AB232021), PGDH3 (Abcam, #AB57030; Sigma, #HPA021241), PARK7 (#AB76008, Abcam) Page 6, line 108-111 Page 7-8, line 147-150	

Cell materials	Yes (indicate where provided: page)	n/a
Cell lines: Provide species information, strain. Provide accession number in repository **OR** supplier name, catalog number, clone number, **OR** RRID	ATCC; human lung cancer lines H1993, H2228, HCC44, HCC78, HCC15, H2170, H520, EBC-1, HCC33, H1339, H82, NCI; human lung cancer lines DMS114, H3122 and H69, Horizon Discovery; EBC-1 KRAS cells. Page 6-7, line 118-124	
Primary cultures: Provide species, strain, sex of origin, genetic modification status.		n/a No primary cultures included in the study

Experimental animals	Yes (indicate where provided: page)	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		n/a No animals included in the study
Animal observed in or captured from the field: Provide species, sex and age where possible		n/a No animals included in the study
Model organisms: Provide Accession number in repository (where relevant) **OR** RRID		n/a No animals included in the study

Plants and microbes	Yes (indicate where provided: page)	n/a
Plants: provide species and strain, unique accession number if available, and source (including location for collected wild specimens)		n/a No plants included in the study
Microbes: provide species and strain, unique accession number if available, and source		n/a No animals included in the study

Human research participants	Yes (indicate where provided: page)	n/a
Identify authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	Collection and use of the samples were approved by the ethics committee of the University Medical Center Göttingen (#1-2-08, 24-4-20). Page 6, line 98-100	
Provide statement confirming informed consent obtained from study participants.	Informed consent was obtained from all study participants. Page 6, line 101	
Report on age and sex for all study participants.	Table 1 Supplementary table	

Design

Study protocol	Yes (indicate where provided: page)	n/a
For clinical trials, provide the trial registration number **OR** cite DOI in manuscript.		n/a

Laboratory protocol	Yes (indicate where provided: page)	n/a
Provide DOI or other citation details if detailed step-by-step protocols are available.		n/a

Experimental study design (statistics details)	Yes (indicate where provided: page)	n/a
State whether and how the following have been done**, or** if they were not carried out.		
Sample size determination	All samples matching the inclusion criteria were included	
Randomisation		n/a
Blinding	Investigators were blinded for patient outcome data. Page 6, line 101-103	
Inclusion/exclusion criteria	Inclusion criteria: Informed consent, enough tissue material available, expert histopathologic diagnosis of resected pulmonary adenocarcinoma, SQCLC or SCLC; Exclusion criteria: neoadjuvant radio/chemo therapy	

Sample definition and in-laboratory replication	Yes (indicate where provided: page)	n/a
State number of times the experiment was replicated in laboratory	Results represent data of at least three independent experiments.	
Define whether data describe technical or biological replicates	Data represent biological replicates	

Ethics	Yes (indicate where provided: page)	n/a
Studies involving human participants: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.	Collection and use of the samples were approved by the ethics committee of the University Medical Center Göttingen (#1-2-08, 24-4-20). Page 6, line 98-100	
Studies involving experimental animals: State details of authority granting ethics approval (IRB or equivalent committee(s), provide reference number for approval.		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.		n/a

Dual Use Research of Concern (DURC)	Yes (indicate where provided: page)	n/a
If study is subject to dual use research of concern, state the authority granting approval and reference number for the regulatory approval		n/a

Analysis

Attrition	Yes (indicate where provided: page)	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.	Samples that were not possible to evaluate for immunohistochemical staining for technical reasons for any of the five tested markers were excluded from the study	

Statistics	Yes (indicate where provided: page)	n/a
Describe statistical tests used and justify choice of tests.	Correlation between clinical parameters and 1CM enzymes expression was analyzed using chi-square test. Survival curves were drawn using Kaplan-Meier analyses and the significance was calculated by log-rank test. Students t-test was used for two group comparisons. More than two matched groups were analyzed using one-way ANOVA and Tukey's multiple comparisons tests. Correlation between 1CM enzymes and half maximal inhibitory concentration (IC50) was performed by the Pearson's correlation test. Statistical differences were considered significant at $P < 0.05$. page 8-9, line 168-176	

Data Availability	Yes (indicate where provided: page)	n/a
State whether newly created datasets are available, including protocols for access or restriction on access.		n/a
If data are publicly available, provide accession number in repository or DOI or URL.		n/a
If publicly available data are reused, provide accession number in repository or DOI or URL, where possible.		n/a

Code Availability	Yes (indicate where provided: page)	n/a
For all newly generated code and software essential for replicating the main findings of the study:		n/a
State whether the code or software is available.		n/a
If code is publicly available, provide accession number in repository, or DOI or URL.		n/a

Reporting

Adherence to community standards	Yes (indicate where provided: page)	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.	

http://dx.doi.org/10.21037/tlcr-20-1039