

Table S1 – Questionnaire for evaluating quality of reporting. Items that were changed with respect to the originally registered protocol are marked with an asterisk. The first 5 sections are applicable to all categories of articles and compose the general score. The last 4 sections are applicable only to the corresponding category of study, classified according to the biological model, and compose category-specific scores.

Title/Abstract

1. Is the biological model / species of animal under study reported?
(Yes – 1; No – 0)

Risk of Bias

1. Do the authors report their funding source(s)?
(Yes – 1; No – 0)
2. Is there a statement describing the presence or absence of conflict of interest?
(Yes, and the statement reports a conflict of interest – 1; Yes, and the statement reports no conflict of interest – 1; No statement is present – 0)
3. Is a sample size calculation reported?
(Sample size calculation is reported, with parameters – 1; Sample size calculation is reported, without parameters – 0.5; Sample size calculation is NOT reported – 0)
4. Is assessment of outcome measures reported to be done in a blinded fashion?
(Yes (blinded) – 1; No – 0; Automated/Not applicable)

Drugs and Reagents

1. Are the suppliers for all drugs or other treatments in the data under analysis reported?
(Yes – 1; Partially – 0.5; No – 0; Not applicable)
2. Is every antibody used in the data under analysis linked to a citation, catalogue number, clone number or validation profile?
(Yes – 1; No – 0; Not applicable)
3. For pharmacological interventions, is the dose/concentration reported?
(Yes – 1; Partially – 0.5; No – 0; Not applicable)
4. For pharmacological interventions, is the vehicle reported?
(Yes – 1; No – 0; Not applicable)

Data Presentation

1. Are the groups compared clearly described?
(Yes – 1; No – 0)
2. Does the study provide a clear timeline for the experimental procedures or exposures and the measurement of outcomes in the data under analysis?
(Yes – 1; No – 0; Not applicable)
3. Is a well-defined summary estimate (e.g. mean or median) of quantitative variables provided for each group? (If “Not applicable” is chosen, please provide the reason)
(Yes – 1; No – 0; Not applicable)
4. Are findings presented with a well-defined measure of variation or precision (e.g. SD/SEM/X%CI)? (If “Not applicable” is chosen, please provide the reason)
(Yes – 1; No – 0; Not applicable)
5. Are unit level data presented?
(Yes (in figures) – 1; Yes (in raw data) – 1 ; Yes (both) – 1; No – 0; Not applicable)
6. Are all data shown in figures or tables clearly attributable to a specific experimental group/condition?
(Yes – 1; No – 0; Not applicable)
7. Are the units for each quantitative measure/indexes shown in figures clearly described?

(Yes – 1; No – 0; Not applicable)

8. Is the meaning of any symbols used in figures/tables (e.g. *, #, ^a) clearly described?

(Yes – 1; No – 0; Not applicable)

Data Analysis

1. Is the experimental unit used for analysis clear?

(Yes – 1; No – 0; Not applicable)

2. Is sample size reported for each group?

(Yes (exact) – 1; Yes (range) – 0.5*; Partially – 0.5; No – 0)

3. Are the statistical tests used clearly described?

(Yes – 1; No – 0)

4. Are the variables and groups to which each statistical result refers to made clear?

(Yes – 1; No – 0)

5. Are the results of statistical tests in the figure (including omnibus and post-hoc comparisons) provided (as a p value or otherwise)?

(Yes – 1; Partially – 0.5; No – 0)

6. Are exact p values reported up to 2 decimal units (e.g. p=0.46, p=0.05, p<0.01)?

(Yes – 1; Partially – 0.5; No – 0)

***In vitro* studies**

1. Was the source of cell lines or microorganisms provided?

(Yes – 1; Partially – 0.5; No – 0; Not applicable)

2. For studies involving cell lines or microorganisms, do the authors report whether they have been authenticated recently (e.g., by STR profiling, within 1 year of use)?

(Yes – 1; Yes, but timing is not mentioned (or is more than one year before experiments) – 0.5; Partially – 0.5; No – 0; Not applicable)

3. Is the culture medium reported?

(Yes – 1; Partially – 0.5; No – 0)

4. Are the culture conditions (temperature, [CO₂] and presence of O₂) reported?

(Yes – 1; Partially – 0.5; No – 0)

Animal studies (invertebrates)

1. Is the animal species reported? (if yes, please specify which species)

(Yes – 1; No – 0)

2. Is the strain of the animals reported?

(Yes – 1; No – 0; Not applicable)

3. Is the sex of the animals reported?

(Yes – 1; No – 0; Not applicable)

4. Is the age of the animals reported?

(Yes (exact) – 1; Yes (range) – 0.5; No – 0; Not applicable)

5. Is the source/supplier of the animals reported?

(Yes – 1; No – 0; Not applicable)

6. For *in vivo* pharmacological interventions, is the route of administration reported?

(Yes – 1; No – 0; Not applicable)

7. If anaesthesia was performed, are type, route and dose/concentration described?

(Yes – 1; No – 0; Not applicable)

8. Is the method of euthanasia/tissue collection reported?

(Yes – 1; No – 0; Not applicable)

Animal studies (vertebrates)

1. Is the animal species reported? (If yes, please specify which species)

(Yes – 1; No – 0)

2. Is the strain of the animals reported?
(Yes – 1; No – 0; Not applicable)
3. Is the sex of the animals reported?
(Yes – 1; No – 0; Not applicable)
4. Is the age of the animals reported?
(Yes (exact) – 1; Yes (range) – 0.5; No – 0; Not applicable)
5. Is the number of animals housed together reported?
(Yes (exact) – 1; Yes (range) – 0.5; No – 0; Not applicable)
6. Is the source/supplier of the animals reported?
(Yes – 1; No – 0; Not applicable)
7. Are animals reported to be randomized to experimental groups?
(Yes – 1; No – 0; Not applicable)
8. For *in vivo* pharmacological interventions, is the route of administration reported?
(Yes – 1; No – 0; Not applicable)
9. If anaesthesia was performed, are type, route and dose/concentration described?
(Yes – 1; No – 0; Not applicable)
10. Is the method of euthanasia/tissue collection reported?
(Yes – 1; No – 0; Not applicable)
11. Does the manuscript include an explicit statement of approval by a clearly identified ethics committee?
(Yes (includes approval and committee) – 1; Yes (includes approval but no committee) – 0.5*; No – 0; Not applicable)
12. Does the manuscript name the international, national or institutional guidelines followed?
(Yes – 1; No – 0; Not applicable)

Human studies

1. Does the manuscript describe the recruitment process (including the target population)?
(Yes – 1; No – 0)
2. Are the eligibility criteria adequately described?
(Yes – 1; No – 0)
3. Is the sex of the subjects reported?
(Yes – 1; No – 0; Not applicable)
4. Is the age range of the subjects reported?
(Yes – 1; No – 0)
5. Are subjects reported to be randomized to experimental groups?
(Yes – 1; No – 0; Not applicable)
6. Are the subjects reported to be blinded to the experimental group?
(Yes – 1; No – 0; Not applicable)
7. For pharmacological interventions, is the route of administration reported?
(Yes – 1; No – 0; Not applicable)
8. Does the manuscript include an explicit statement of ethical approval and identify the committee(s) approving the study protocol?
(Yes (includes approval and committee) – 1; Yes (includes approval but no committee) – 0.5; No – 0)
9. Does the manuscript name the international, national or institutional guidelines followed?
(Yes – 1; No – 0)
10. Does the manuscript report that every subject signed an informed consent form?
(Yes – 1; No – 0; Not applicable)

Table S2 – Complete description of geographic region of origin, subject areas and animal species used in articles from both groups.

	bioRxiv	PubMed
Region of origin		
North America	34 (44.7%)	23 (30.3%)
Europe	32 (42.1%)	27 (35.5%)
Asia	5 (6.6%)	18 (23.7%)
Oceania	4 (5.3%)	2 (2.6%)
Latin America	1 (1.3%)	4 (5.3%)
Africa	0	2 (2.6%)
Subject Areas		
Neuroscience	34 (44.7%)	7 (9.2%)
Pharmacology and Toxicology	0	12 (15.8%)
Clinical Trials	0	9 (11.8%)
Epidemiology	0	9 (11.8%)
Microbiology	7 (9.2%)	5 (6.6%)
Cell Biology	6 (7.9%)	2 (2.6%)
Physiology	1 (1.3%)	6 (7.9%)
Molecular Biology	2 (2.6%)	5 (6.6%)
Genetics	5 (6.6%)	1 (1.3%)
Genomics	5 (6.6%)	1 (1.3%)
Evolutionary Biology	5 (6.6%)	0
Developmental Biology	2 (2.6%)	3 (3.9%)
Immunology	1(1.3%)	3 (3.9%)
Cancer Biology	0	3 (3.9%)
Bioengineering	1(1.3%)	2 (2.6%)
Bioinformatics	2 (2.6%)	1 (1.3%)
Pathology	0	2 (2.6%)
Systems Biology	2(2.6%)	0
Animal Behavior and Cognition	1 (1.3%)	1 (1.3%)
Biochemistry	1 (1.3%)	1 (1.3%)
Scientific communication and education	0	1 (1.3%)
Synthetic Biology	1 (1.3%)	0
Other	-	2 (2.6%)
Invertebrate animal species		
<i>Drosophila</i> sp.	1	0
<i>Daphnia magna</i>	0	1
Vertebrate animal species		
Mouse	14 (56%)	7 (28%)
Rat	1 (4%)	12 (48%)
Macaque	3 (12%)	0
Zebrafish	3 (12%)	1 (4%)
Chicken	2 (8%)	0
Pig	0	2 (8%)
Buffalo	0	1 (4%)
Cod	0	1 (4%)

Cow	0	1 (4%)
Porpoise	1 (4%)	0
Turtle	1 (4%)	0

Table S3 – Interevaluator agreement. The top part of the table shows mean agreement between each pair of evaluators (labelled as A to O). The bottom part of the table shows the number of articles analysed by each pair of evaluators. The last column shows the mean agreement of each evaluator with all others.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	Mean
A		76.7%	78.0%	79.2%	80.6%	74.4%	80.5%	-	73.0%	79.9%	79.4%	72.9%	82.1%	74.1%	77.2%	77.5%
B	10		82.7%	83.4%	81.1%	77.8%	77.6%	78.5%	83.9%	82.9%	79.7%	-	87.3%	-	85.2%	81.4%
C	8	6		75.3%	83.3%	79.3%	72.8%	81.4%	66.7%	79.9%	76.5%	79.4%	-	77.3%	-	77.7%
D	8	12	5		82.3%	-	68.2%	80.0%	75.7%	-	79.0%	69.0%	81.7%	-	86.3%	78.2%
E	6	8	5	11		80.0%	85.1%	84.3%	82.9%	87.0%	84.3%	69.0%	85.3%	78.7%	82.9%	81.9%
F	4	2	4	0	2		77.2%	74.5%	71.4%	76.7%	65.7%	76.3%	86.2%	73.3%	77.0%	76.1%
G	2	4	2	2	2	4		75.2%	69.2%	79.3%	78.5%	74.3%	83.9%	72.8%	80.8%	76.8%
H	0	4	9	7	6	3	5		78.6%	82.8%	88.3%	82.7%	83.0%	-	77.1%	80.5%
I	2	2	3	7	3	6	5	6		78.6%	87.8%	80.0%	82.9%	82.8%	85.4%	78.5%
J	6	2	6	0	2	6	1	5	6		75.5%	86.1%	82.5%	92.0%	79.3%	81.7%
K	6	6	4	4	4	2	3	4	2	4		83.3%	87.8%	8.3%	81.6%	80.8%
L	2	0	3	1	1	8	4	2	1	4	8		83.0%	88.6%	89.7%	79.5%
M	4	4	0	2	2	1	4	4	2	4	5	5		85.7%	85.6%	84.4%
N	4	0	3	0	2	9	5	0	5	4	4	6	4		85.7%	81.3%
O	2	4	0	4	2	5	5	2	2	4	2	6	9	6		82.6%

Table S4 – Scores by evaluator for each group of articles.

Evaluator	bioRxiv (Mean ± SD, n)	PubMed (Mean ± SD, n)
A	59.4 ± 12.8, 16	65.1 ± 11.6, 16
B	69.1 ± 10.0, 16	68.3 ± 11.3, 16
C	66.8 ± 17.8, 15	67.6 ± 12.3, 13
D	66.4 ± 13.9, 16	74.3 ± 12.3, 16
E	68.7 ± 11.8, 14	67.2 ± 11.6, 14
F	62.6 ± 8.4, 14	68.2 ± 9.4, 15
G	66.9 ± 10.1, 13	72.3 ± 11.8, 14
H	65.1 ± 10.3, 15	67.3 ± 11.3, 16
I	66.0 ± 15.6, 16	65.6 ± 15.3, 14
J	66.0 ± 10.3, 14	67.4 ± 7.5, 13
K	65.4 ± 15.4, 14	75.1 ± 7.1, 15
L	64.2 ± 11.0, 14	76.0 ± 7.9, 14
M	66.5 ± 7.9, 11	77.5 ± 8.4, 14
N	68.6 ± 11.4, 14	68.8 ± 10.5, 12
O	66.5 ± 10.8, 14	76.9 ± 9.2, 14

Table S5 – Reporting scores for each section of the general questionnaire. Sample sizes are per group and statistical results refer to Student’s t test for each comparison. Many articles had no applicable questions within the ‘Drugs and reagents’ section; therefore sample size is reduced for this section.

Section	Mean ± SD (bioRxiv)	Mean ± SD (PubMed)	t value	p value	Sample Size
Title	84.2 ± 36.7	93.4 ± 24.9	-1.81	0.07	76
Risk of Bias	39.2 ± 23.6	39.9 ± 20.1	-0.18	0.85	76
Drugs and reagents	63.0 ± 38.8	79.4 ± 29.6	-1.97	0.05	30 (bioRxiv), 38 (PubMed)
Data presentation	75.1 ± 16.9	79.8 ± 12.7	-1.97	0.05	76
Data analysis	85.0 ± 21.2	83.5 ± 20.0	0.45	0.65	76

Supplementary Table 6 – Number of articles reporting each item assessed. Questions without the option for partially reported are marked with ‘-’.

Items assessed	bioRxiv			PubMed		
	Yes	Part.	No	Yes	Part.	No
Title/Abstract						
Biological model or species	64 (84.2%)	-	12 (15.8%)	71 (93.4%)	-	5 (6.6%)
Risk of Bias						
Funding source	63 (82.9%)	-	13 (17.1%)	58 (76.3%)	-	18 (23.7%)
Conflict of interest statement	34 (44.7%)	-	42 (55.3%)	50 (65.8%)	-	26 (34.2%)
Sample size calculation	7 (9.2%)	1 (1.3%)	68 (89.5%)	2 (2.6%)	0	74 (97.4%)
Blinded assessment of outcomes	2 (4.1%)	-	47 (95.9%)	3 (5.2%)	-	55 (94.8%)
Drugs and Reagents						
Suppliers	13 (48.1%)	5 (18.5%)	9 (33.3%)	31 (81.6%)	3 (7.9%)	4 (10.5%)
Antibody validation (citation, catalogue/clone number, validation profile)	7 (53.8%)	-	6 (46.2%)	3 (100%)	-	0
Dose/ concentration (for pharmacological interventions)	18 (94.7%)	0	1 (5.3%)	27 (87.1%)	1 (3.2%)	3 (9.7%)
Vehicle (for pharmacological interventions)	11 (68.8%)	-	5 (31.2%)	18 (62.1%)	-	11 (37.9%)
Data presentation						
Clear description of groups	74 (97.4%)	-	2 (2.6%)	75 (98.7%)	-	1 (1.3%)

Clear timeline	59 (84.3%)	-	11 (15.7%)	59 (85.5%)	-	10 (14.5%)
Summary estimate definition	48 (65.7%)	-	25 (34.3%)	57 (81.4%)	-	13 (18.6%)
Variation/precision measure description	49 (66.2%)	-	25 (33.8%)	60 (84.5%)	-	11 (15.5%)
Unit level data	22 (28.9%)	-	54 (71.1%)	3 (4.2%)	-	69 (95.8%)
Clear group attribution of data	76 (100%)	-	0	76 (100%)	-	0
Units description	65 (86.7%)	-	10 (13.3%)	67 (93.1%)	-	5 (6.9%)
Symbols meaning	27 (69.2%)	-	12 (30.8%)	45 (91.8%)	-	4 (8.2%)

Data analysis

Experimental unit	72 (94.7%)	-	4 (5.3%)	65 (85.5%)	-	11 (14.5%)
Exact sample size description	62 (81.6%)	5 (6.6%)	9 (11.8%)	58 (76.3%)	9 (11.8%)	9 (11.8%)
Statistical tests used	62 (81.6%)	-	14 (18.4%)	67 (88.2%)	-	9 (11.8%)
Variables and groups to which the statistical result refers	69 (90.8%)	-	7 (9.2%)	72 (94.7%)	-	4 (5.3%)
Complete statistical results	58 (76.3%)	7 (9.2%)	11 (14.5%)	49 (64.5%)	18 (23.7%)	9 (11.8%)
Exact p values	49 (64.5%)	6 (7.9%)	21 (27.6%)	39 (51.3%)	12 (15.8%)	25 (32.9%)

In vitro studies

Source/supplier	9 (50%) (11.1%)	2 (11.1%)	7 (38.9%)	12 (66.7%)	0	6 (33.3%)
Authentication (within 1 year from experiments)	0 (5.9%)	1 (5.9%)	16 (94.1%)	0	0	18 (100%)
Culture medium	14 (77.8%)	0	4 (22.2%)	17 (94.4%)	0	1 (5.6%)
Culture conditions (temperature, atmosphere)	3 (16.7%)	6 (33.3%)	9 (50%) (27.6%)	7 (38.9%)	9 (50%) (23.7%)	2 (11.1%)

Animal studies (vertebrates)

Species	25 (100%)	-	0	25 (100%)	-	0
Strain	18 (78.3%)	-	5 (21.7%)	24 (100%)	-	0
Sex	12 (48%)	-	13 (52%)	18 (75%)	-	6 (25%)
Age	5 (20.8%)	9 (37.5%)	10 (41.7%)	7 (29.2%)	7 (29.2%)	10 (41.6%)
Housing number	1 (4.3%)	1 (4.3%)	21 (91.3%)	3 (12.5%)	2 (8.3%)	19 (79.2%)

Source/supplier	12 (48%)	-	13 (52%)	22 (88%)	-	3 (12%)
Randomization	0	-	14 (100%)	8 (47.1%)	-	9 (52.9%)
Route of administration (for pharmacological interventions)	6 (100%)	-	0	10 (100%)	-	0
Anaesthesia (type, route, dose/concentration)	10 (66.7%)	-	5 (33.3%)	6 (60%)	-	4 (40%)
Euthanasia method	8 (47.1%)	-	9 (52.9%)	8 (44.4%)	-	10 (55.6%)
Approval by ethics committee	14 (56%)	0	11 (44%)	16 (66.7%)	0	8 (33.3%)
Ethics guidelines followed	14 (58.3%)	-	10 (41.7%)	17 (68%)	-	8 (32%)

Human studies

Recruitment process	19 (59.4%)	-	13 (40.6%)	28 (87.5%)	-	4 (12.5%)
Eligibility criteria	19 (59.4%)	-	13 (40.6%)	29 (90.6%)	-	3 (9.4%)
Sex	27 (87.1%)	-	4 (12.9%)	29 (90.6%)	-	3 (9.4%)
Age range	26 (81.2%)	-	6 (18.8%)	27 (84.4%)	-	5 (15.6%)
Randomization	1 (25%)	-	3 (75%)	8 (88.9%)	-	1 (11.1%)
Blinding of subjects	1 (14.3%)	-	6 (85.7%)	1 (16.7%)	-	5 (83.3%)
Route of administration (for pharmacological interventions)	2 (100%)	-	0	2 (66.7%)	-	1 (33.3%)
Ethics committee approval	23 (71.9%)	0	9 (28.1%)	23 (71.8%)	2 (6.2%)	7 (21.9%)
Ethics guideline followed	8 (25%)	-	24 (75%)	10 (31.2%)	-	22 (68.8%)
Signed informed consent	27 (90%)	-	3 (10%)	15 (68.2%)	-	7 (31.8%)

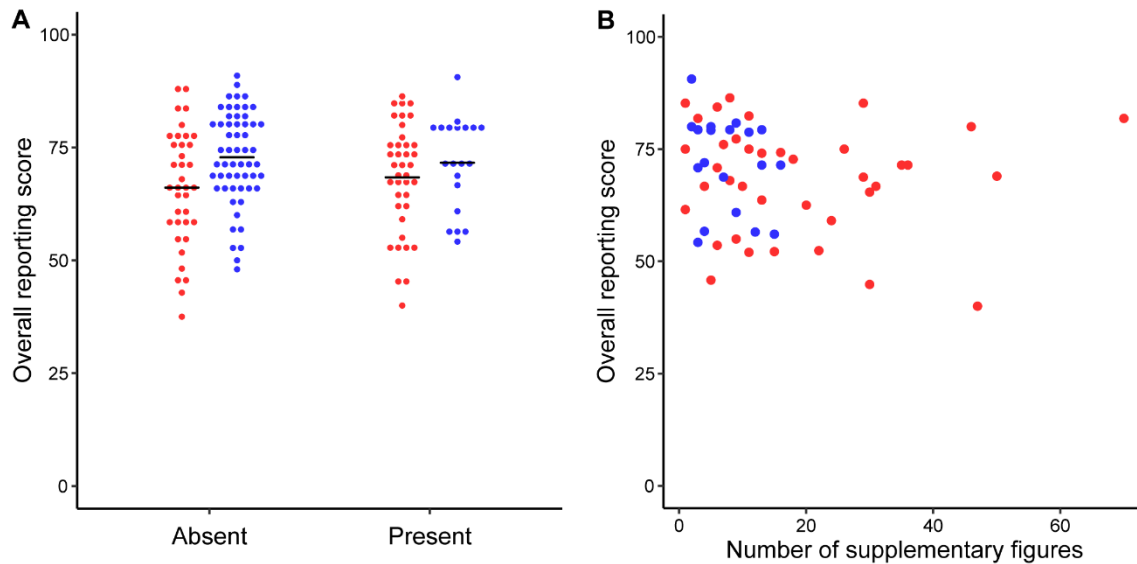


Figure S1 – Correlations between reporting scores and supplementary material. **(A)** Overall reporting score according to presence of supplementary material. Two-way ANOVA, $p_{\text{group}}=0.005$ ($F=8.03$, $df=1$), $p_{\text{supplmat}}=0.70$ ($F=0.15$, $df=1$), $p_{\text{interaction}}=0.38$ ($F=0.77$, $df=1$). bioRxiv: $n_{\text{absent}}=37$, $n_{\text{present}}=39$; PubMed: $n_{\text{absent}}=56$, $n_{\text{present}}=20$. **(B)** Overall reporting score and size of supplementary material (number of figure subpanels/tables). $\rho=-0.20$, $p=0.13$, $n=59$ (all articles with supplementary material), $\rho=-0.12$, $p=0.46$, $n=39$ (bioRxiv) and $\rho=-0.27$, $p=0.25$, $n=20$ (PubMed). In all panels, bioRxiv articles are in red and PubMed ones are in blue.

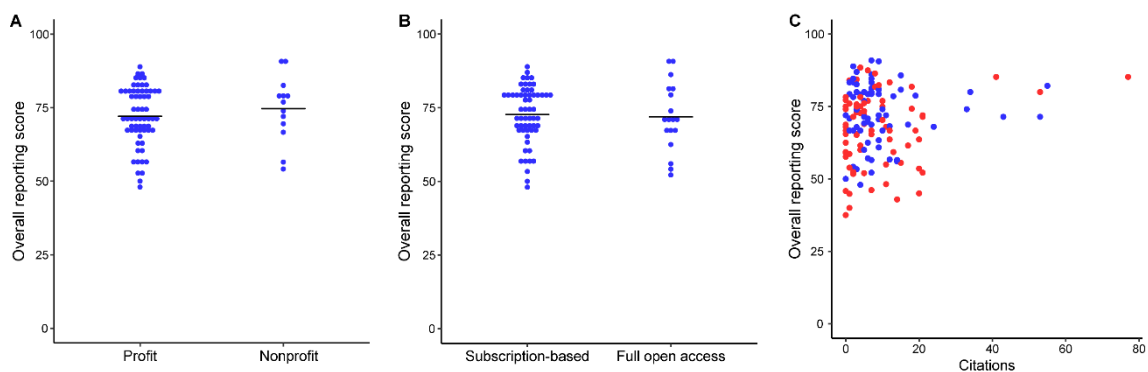


Figure S2 – Correlation between reporting scores, publication venue and citations. **(A)** Publishers were classified as for-profit or non-profit. For-profit: 72.1 ± 10.0 , $n=63$; Non-profit: 74.7 ± 11.1 , $n=13$. Student's *t* test, $t=-0.85$, $p=0.39$. **(B)** Open access status of the journal. Subscription-based, 72.7 ± 9.7 , $n=58$; Full open access, 71.9 ± 11.6 , $n=18$. Student's *t* test, $t=0.31$, $p=0.76$. Values are mean \pm S.D. **(C)** Correlation between number of citations and overall

reporting score. PubMed: $\rho=0.03$, $p=0.78$, $n=76$; bioRxiv: $\rho=0.12$, $p=0.29$, $n=76$. In all panels, bioRxiv articles are in red and PubMed ones are in blue.

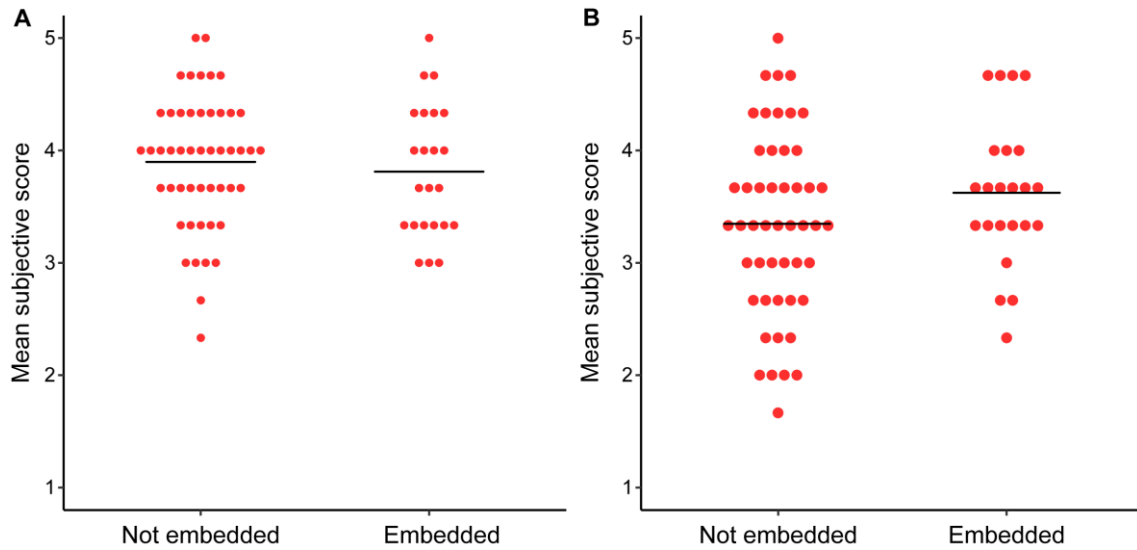


Figure S3 – Effect of formatting on subjective assessments of preprints. **(A)** Subjective assessment on title/abstract clarity. Student's t test, $t=0.58$, $p=0.56$. **(B)** Subjective assessment on easiness to locate information in the article. Student's t test, $t=-1.43$, $p=0.16$. $n_{\text{Not embedded}}=49$, $n_{\text{Embedded}}=23$.