

PEER-REVIEW REPORT

Name of journal: *World Journal of Biological Chemistry*

Manuscript NO: 87028

Title: Protein Arginine Methyltransferase 6 (PRMT6) is a Novel Substrate of Protein Arginine Methyltransferase 1 (PRMT1)

Provenance and peer review: Unsolicited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 05393454

Position: Peer Reviewer

Academic degree: PhD

Professional title: Professor

Reviewer's Country/Territory: India

Author's Country/Territory: United States

Manuscript submission date: 2023-07-19

Reviewer chosen by: Geng-Long Liu

Reviewer accepted review: 2023-08-14 04:48

Reviewer performed review: 2023-08-18 11:05

Review time: 4 Days and 6 Hours

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input checked="" type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Novelty of this manuscript	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No novelty
Creativity or innovation of this manuscript	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No creativity or innovation

Scientific significance of the conclusion in this manuscript	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No scientific significance
Language quality	<input type="checkbox"/> Grade A: Priority publishing <input checked="" type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
Conclusion	<input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input checked="" type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Re-review	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Peer-reviewer statements	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous
	Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

1. The English need improvement since there are some grammatical and syntax errors in the manuscript. For example, the words "RNA splicing" may be as "and RNA splicing"; "Type I" as "the Type I"; "6-well" as "a 6-well"; "to cells" as "to the cells"; "knock down" as "the knock down"; "stored 16" as "stored for 16"; "phosphor" as "a phosphor"; "varied" as "the varied"; "in presence" as "in the presence"; "washed by" as "washed with"; "PBS for 3" as "PBS 3"; "PBS for 5" as "PBS 5"; "western" as "a western"; "as template" as "as a template"; "stored in" as "stored at"; "mutants was" as "mutants were"; "of P81" as "of the P81"; "of other" as "of the other"; "cell lysate" as "and cell lysate"; "Anti-Myc" as "The anti-Myc"; "down PRMT1" as "down the PRMT1"; "in presence" as "in the presence"; "clearly was" as "clearly"; "as PRMT1" as "as the PRMT1"; ", PRMT6" as ", the PRMT6"; "SAM-binding" as "the SAM-binding"; "2-fold" as "a 2-fold"; "The past" as "Past"; "finding of" as "findings about"; "samples were" as "and samples were"; "Michaelis-Menten" as "the Michaelis-Menten"; "highlighted on" as "are highlighted on". The grammar mistakes which are not mentioned here are also to be checked and corrected properly. 2. There are some typing mistakes as well, and

authors are advised to carefully proof-read the text. For example, the words “steady state” may be as “steady-state”; “therapeutic effect” as “therapeutic effects”; “process require” as “processes require”; “time dependent” as “time-dependent”; “pulled down” as “pulled-down”; “in gel” as “in-gel”; “Site directed” as “Site-directed”; “Then single” as “The single”; “high pressure” as “high-pressure”; “beads firstly” as “beads first”; “clearing showing” as “clearly showing”; “knock down” as “knockdown”; “PRMT6 concentration” as “PRMT6 concentrations”; “wild type” as “wild-type”; “varying concentration” as “varying concentrations”; “wellg” as “well”; “concentration were” as “concentrations were”; “PRMT1 mediated” as “PRMT1-mediated”; “impact in” as “impact on”; “cancer relevant” as “cancer-relevant”; “bind to” as “binds to”; “pulled down” as “pulled-down”; “concentration dependent” as “concentration-dependent”; “the corresponded” as “the corresponding”. The typos not mentioned here are also to be checked and corrected properly.

3. Check the abbreviations throughout the manuscript and introduce the abbreviation when the full word appears the first time in the abstract and the remaining for the text and then use only the abbreviation (For example, LC-MS/MS, asymmetric dimethylarginine (ADMA), etc.,). Make a word abbreviated in the article that is repeated at least three times in the text, not all words to be abbreviated. The authors should avoid the usage for abbreviations in the keywords.

4. The full form of the species should be given when the first time appears in both the abstract and in the remaining part of the manuscript and it should be followed by only the first letter of the genus (For example, *Escherichia coli* when the first time appear and followed by *E. coli*).

5. In the materials and methods, the authors may cite references for standard protocol, instead of mentioning kid or manufacture instructions, if reference is given with it and the same should be added in the reference section.

6. The table and figure legends should be improved and a proper footnote should be given. All legends should have enough description for a reader to understand the table and figures without

having to refer back to the main text of the manuscript. For example, the necessary abbreviations should be given. 7. The limitation of the present research and future direction may be given along with conclusion or under separate heading for understanding the concepts clearly.

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Manuscript NO: 87028

Title: Protein Arginine Methyltransferase 6 (PRMT6) is a Novel Substrate of Protein Arginine Methyltransferase 1 (PRMT1)

Provenance and peer review: Unsolicited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 05521474

Position: Peer Reviewer

Academic degree: MD

Professional title: Doctor

Reviewer's Country/Territory: Reviewer_Country

Author's Country/Territory: United States

Manuscript submission date: 2023-07-19

Reviewer chosen by: Geng-Long Liu

Reviewer accepted review: 2023-08-20 02:18

Reviewer performed review: 2023-08-24 15:52

Review time: 4 Days and 13 Hours

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input checked="" type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Novelty of this manuscript	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No novelty
Creativity or innovation of this manuscript	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Good <input checked="" type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No creativity or innovation

Scientific significance of the conclusion in this manuscript	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No scientific significance
Language quality	<input checked="" type="checkbox"/> Grade A: Priority publishing <input type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
Conclusion	<input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input checked="" type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Re-review	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Peer-reviewer statements	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous
	Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

First, this manuscript revealed that PRMT1 interacted with PRMT6 in vitro and in vivo.

Second, the author showed that the R106 of PRMT6 was the major methylation site induced by PRMT1, and PRMT1-mediated methylation suppressed the activity of PRMT6 on H3 methylation. Altogether, this work illustrates the dynamic interplay between PRMT1 and PRMT6. However, as shown by Kang et al (Skeletal muscle-specific Prmt1 deletion causes muscle atrophy via deregulation of the PRMT6-FOXO3 axis, DOI: 10.1080/15548627.2019.1569931), muscle-specific PRMT1 deficiency led to PRMT6 upregulating FOXO3 and muscle atrophy, meaning that PRMT1 suppresses PRMT6.

RE-REVIEW REPORT OF REVISED MANUSCRIPT

Name of journal: *World Journal of Biological Chemistry*

Manuscript NO: 87028

Title: Protein Arginine Methyltransferase 6 (PRMT6) is a Novel Substrate of Protein Arginine Methyltransferase 1 (PRMT1)

Provenance and peer review: Unsolicited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 05393454

Position: Peer Reviewer

Academic degree: PhD

Professional title: Professor

Reviewer's Country/Territory: India

Author's Country/Territory: United States

Manuscript submission date: 2023-07-19

Reviewer chosen by: Xin-Liang Qu

Reviewer accepted review: 2023-09-11 11:36

Reviewer performed review: 2023-09-12 10:10

Review time: 22 Hours

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input checked="" type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Language quality	<input type="checkbox"/> Grade A: Priority publishing <input checked="" type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
Conclusion	<input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input checked="" type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Peer-reviewer	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous

statements

Conflicts-of-Interest: [] Yes [Y] No

SPECIFIC COMMENTS TO AUTHORS

1. There are some grammatical, alignments and typographical errors are noted in the manuscript and it should be thoroughly checked and corrected throughout the manuscript. For example, the words “emerges” may be as “emerged”; “methyltranferase” as “methyltransferase”; “study we” as “study, we”; “shows PRMT6” as “shows that PRMT6”; “knock down” as “knockdown”; “by high-pressure” as “by a high-pressure”; “observed PRMT6” as “observed that PRMT6”; “, the cell lysate” as “, and the cell lysate”; “PRMT6 was decreased” as “PRMT6 were decreased”; “1A was resulted” as “1A has resulted or 1A resulted”; “data were fit” as “data fit”; “for detecting” as “to detect”; “possible is” as “possible”; “radioactive gel” as “a radioactive gel”; “histone H3” as “the histone H3”; “that H3R2me2a” as “that the H3R2me2a”; “As showed” as “As shown”; “member in the” as “member of the”; “fine tune” as “fine-tune”; “hint at” as “hints”; “KmoF” as “Km of”; “PRMT6R106Kstill” as “PRMT6R106K still”; “retains similar” as “retains a similar”; “exhibited similar” as “exhibited a similar”; “The previous” as “Previous”; “HOXAgenes” as “HOXA genes”; “given on” as “given to”. 2. This suggestion is not carried out properly (Check the abbreviations throughout the manuscript and introduce the abbreviation when the full word appears the first time in the abstract and the remaining for the text and then use only the abbreviation). For example, the expansion for LC-MS/MS is not given in both abstract and the remaining part of the manuscript and it should be rectified. 3. The technical terms (Latin Phrase) “in vivo” should be italic and it should be checked all over the manuscript. 4. This suggestion is not carried out properly and it should be rectified. In the materials and methods, the authors may cite references for standard protocol, instead of mentioning kit or manufacture instructions, if reference is given with it and the same should be

added in the reference section. 5. The figure legends should be improved and a proper footnote should be given. All legends should have enough description for a reader to understand the figures without having to refer back to the main text of the manuscript. For example, the necessary abbreviations should be given (PRMT1-PRMT6).