



# Expression of Concern

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On the basis of the recommendation of the American Diabetes Association's Panel on Ethical Scientific Programs, the American Diabetes Association, the publisher of *Diabetes*, is issuing this expression of concern to alert readers to questions about the reliability of data in the following articles authored by Mario J.A. Saad and colleagues.

Readers of the journal contacted *Diabetes* about potentially duplicated and manipulated images in the below-listed articles. The corresponding/lead authors' institution, the State University of Campinas (São Paulo, Brazil), has recently completed an investigation of two of these articles and has been asked to undertake an investigation of two others, as described below.

*Diabetes* is a member journal of the Committee on Publication Ethics (COPE) (publicationethics.org). As such, the editors of the journal and the Association's Panel on Ethical Scientific Programs refer to COPE's guidelines and recommendations when reviewing such matters.

*Diabetes* will make final decisions on these articles after the journal obtains more information on the reliability of the data and conclusions presented in each article.

## Physical Exercise Reduces Circulating Lipopolysaccharide and TLR4 Activation and Improves Insulin Signaling in Tissues of DIO Rats. *Diabetes* 2011;60:784–796. DOI: 10.2337/db09-1907

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After readers of the journal contacted *Diabetes* about potentially duplicated and manipulated images in the above-listed article, the American Diabetes Association's Panel on Ethical Scientific Programs reviewed the following issues:

- An image published previously by the same laboratory in *PLoS ONE* (Calisto et al. *PLoS ONE* 2010. DOI: 10.1371/journal.pone.0014232) appears to be duplicated in this article. Figure 4B (bands 2–4) from the *PLoS ONE* article reappears in Fig. 3D (bands 1–3) in the article cited above, with horizontal rotation.
- Figure 7 of the above-cited article appears to contain several instances of duplicated and overlapping bands. Specifically, these duplications appear in Fig. 7D (lane 1) and Fig. 7E (lane 3), Fig. 7D (lane 3) and Fig. 7E (lane 1), Fig. 7D (lane 4) and Fig. 7E (lane 2), Fig. 7D (lane 5) and Fig. 7E (lane 5), and Fig. 7D (lane 7) and Fig. 7E (lane 7).

The Panel contacted the authors to inform them of these issues and to request an explanation. Responding on behalf of all authors, Mario J.A. Saad, the corresponding author, explained that the files had been mixed up and misplaced during the assembly of the figures and that the incorrect blots had inadvertently been included in Fig. 7 of the *Diabetes* article and Fig. 4 of the *PLoS ONE* article. Dr. Saad stated that these misplacements were unintentional; he provided a new image for the *Diabetes* article and proposed publishing corrigenda in both *Diabetes* and *PLoS ONE* to clarify these issues.

Given the extent of reordering of the duplicate lanes between Fig. 7D and E, Dr. Saad's response did not dispel the Panel's concerns. Therefore, the Panel contacted the authors' institution, the State University of Campinas (São Paulo, Brazil), to request an investigation into this matter. The University appointed an inquiry commission to investigate this issue. The Panel on Ethical Scientific Programs has recently received the University's report. The University Commission determined that "the bands that

appear in Figure 7D (bands 1, 3, 5 and 7) were presented in an incorrect manner, since they were withdrawn from a different experiment at which muscle tissue [was] used"; "Figure 7E is correct [but] there are duplicated bands in Figure 7D that are also present in Figure 7E"; "Figure 4B in the [*PLoS ONE* study] is not correct and Figure 3D in the study published in [*Diabetes*] is correct."

Because the University's inquiry did not dispute the duplication of certain bands in these immunoblot images and reiterated that some were incorrect, the Panel remains concerned about the reliability and credibility of some of the data presented in this article.

**Loss-of-Function Mutation in Toll-Like Receptor 4 Prevents Diet-Induced Obesity and Insulin Resistance. *Diabetes* 2007;56:1986–1998. DOI: 10.2337/db06-1595**

After readers of the journal contacted *Diabetes* about potentially duplicated and manipulated images in the above-listed article, the American Diabetes Association's Panel on Ethical Scientific Programs reviewed the following issues:

- There appear to be instances of duplicated bands in Fig. 3B (bands 1, 3, and 7), Fig. 3D (bands 2 and 5 and bands 3 and 6), Fig. 5E (bands 1 and 3 and bands 2 and 4), and Fig. 8E (bands 2 and 5).
- Figures 3, 5, 6, 7, and 8 contain evidence of suspected splicing in the displayed immunoblot images.

The Panel contacted the authors to inform them of these issues and to request an explanation. Responding on behalf of all authors, Mario J.A. Saad, the corresponding author, stated that the images had not been manipulated and that his laboratory no longer had the original blots for the article.

Therefore, the Panel contacted the corresponding author's institution, the State University of Campinas (São Paulo, Brazil), to request an investigation into this matter. The University appointed an inquiry commission to investigate this issue. The University Commission determined that "there was splicing in figures 3, 5, 6, 7 and 8 ... and that the splicing involved bands of [the] same gel, not altering the conclusions presented in the [study cited above]"; that "there was duplication of bands 1, 3, and 7 of figure 3B"; and that "it was not possible to confirm the duplications of figures 3D, 5E and 8E even after analyzing the digitalized versions of the original gels."

After receiving the results of the University's investigation, Dr. Saad submitted for review the "digitalized versions of the original gels" to the American Diabetes Association's Panel on Ethical Scientific Programs. The Panel concluded that these resubmitted versions did not reflect the immunoblot images shown in the published figures.

Given these inaccuracies and because the University's inquiry did not dispute the duplication of certain bands in these immunoblot images, the Panel remains concerned about the reliability and credibility of some of the data presented in this article.

**Exercise Improves Insulin and Leptin Sensitivity in Hypothalamus of Wistar Rats. *Diabetes* 2006;55:2554–2561. DOI: 10.2337/db05-1622**

Readers of the journal contacted *Diabetes* about potentially duplicated images in the above-listed article. The American Diabetes Association's Panel on Ethical Scientific Programs reviewed the following issues:

- The PI3K immunoblot images in Fig. 3A and C appear to be the same.
- The pY immunoblot images in Figs. 2C and 3C appear to be the same.
- Lanes 1 and 2 in Fig. 3B appear to be the same as lanes 3 and 2, respectively, in Fig. 5A.

To address these concerns, the Panel contacted José B.C. Carvalheira, the corresponding author, to inform him of these issues and to request an explanation. Dr. Carvalheira acknowledged that the PI3K immunoblot images in Fig. 3A and C and the pY immunoblot images in Figs. 2C and 3C are duplicate presentations of the same

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Western blot. In addition, lanes 1 and 2 in Fig. 3B are the same as lanes 3 and 2, respectively, in Fig. 5A. Dr. Carvalheira stated that these duplications were the result of mistakes that occurred during figure preparation but that they did not compromise the conclusions presented in the article. He proposed running a new set of experiments and submitting a corrigendum to be published in *Diabetes*.

The Association's Panel on Ethical Scientific Programs has recently contacted the authors' institution, the State University of Campinas (São Paulo, Brazil), to request an investigation into the reliability of the data and conclusions presented in this article.

**Effect of Captopril, Losartan, and Bradykinin on Early Steps of Insulin Action. *Diabetes* 1997;46:1950–1957. DOI: 10.2337/diab.46.12.1950**

After readers of the journal contacted *Diabetes* about potentially duplicated images in the above-listed article, the American Diabetes Association's Panel on Ethical Scientific Programs reviewed the following issue:

- Bands 2 and 4 appear to be duplicated in the immunoblot images of Figs. 7B and 8C.

To address this concern, the Panel contacted Mario J.A. Saad, the corresponding author, to inform him of this issue and to request an explanation. Dr. Saad stated that although the bands are similar, they are related to different gels. Dr. Saad sent the Panel the final photographic pictures of the immunoblot images of Figs. 7B and 8C that had been submitted to *Diabetes*, but the Panel was not convinced that these images were not all derived from the same gel.

The Association's Panel on Ethical Scientific Programs has recently contacted the authors' institution, the State University of Campinas (São Paulo, Brazil), to request an investigation into the reliability of the submitted evidence and the data and conclusions presented in this article.

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