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RETRACTION

Cardiac Expression of Factor X Mediates Cardiac Hypertrophy and Fibrosis in Pressure Overload

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This article has been retracted: please see Elsevier Policy on Article Withdrawal (https://www.elsevier.com/about/our-business/policies/article-withdrawal).

The *JACC* Journals Ethics Board has voted to retract this paper. After questions about specific images were originally raised by a reader, the journal's editorial board requested a response from the authors, who provided original images to replace Figures 6D and Figure 7E and a subsequent correction was published in September 2020. The correction raised further concerns about the image data. The decision to retract the paper is based on concerns regarding the splicing and/or duplication of Western blot images in Figures 3, 5, 6, S7, S8, S9, and S11, as detailed below. None of the apparent splices were indicated in the arrangement of the figures.

1. Figure 3F:
There appear to be splices between lanes 2 and 3 and between lanes 4 and 5 of the p-Stat3 panel. The corresponding total Stat3 panel does not appear to be spliced. Based on this splicing pattern, the total Stat3 protein must have been detected on a different blot than the p-Stat3, and thus it is not a valid loading control.

2. Figures 5D and S8E:
Lane 3 of the right-hand panel of p-Erk1/2 in Figure 5D appears to be a duplicate of lane 3 of the p-Erk1/2 panel in Figure S8E, and thus it cannot represent a different sample. Splice lines are evident on either side of lane 3 of the p-Erk1/2 panel in Figure S8E, implying that the lane from the panel in Figure 5D was copied and pasted into the panel in Figure S8E.

Lanes 2 and 4 of the right-hand panel of p-Erk1/2 in Figure 5D appear to be longer exposures of the same blot as lanes 2 and 4 of the p-Erk1/2 panel in Figure S8E, and thus they cannot represent different samples.

3. Figure 5E:
The right-hand p-Erk1/2 panel contains 8 lanes, but the corresponding total Erk1/2 panel contains 9 lanes. Thus, it is unclear which control lanes correspond to which experimental lanes.

4. Figure 6D:
The TGF-β1 blot appears to be a longer exposure of the same blot that represents CTGF in the same figure.

5. Figure 6E:
The TIMP-1 panel appears to be spliced between lanes 1 and 2. The corresponding GAPDH panel does not appear to be spliced. Based on this splicing pattern, GAPDH must have been detected on a different blot than TIMP-1, and thus it is not a valid loading control.

The TIMP-3 panel appears to be spliced between lanes 4 and 5. The corresponding GAPDH panel does not appear to be spliced. Based on this splicing pattern, GAPDH must have been detected on a different blot than TIMP-1, and thus it is not a valid loading control.

6. Figure S7A:
The p-Erk5 panel appears to be spliced between lanes 2 and 3 and between lanes 3 and 4. The corresponding total Erk5 panel does not appear to be spliced. Based on this splicing pattern, the total p-Erk5 protein must have been detected on a different blot than p-Erk5, and thus it is not a valid loading control.

7. Figure S8D:
The p-Erk1/2 panel appears to be spliced between lanes 3 and 4. The corresponding total Erk1/2 panel does not appear to be spliced. Based on this splicing pattern, the total Erk1/2 protein must have been detected on a different blot than p-Erk1/2, and thus it is not a valid loading control.

8. Figure S8E:
The p-Erk5 panel appears to be spliced between lanes 6 and 7 and between lanes 7 and 8. The corresponding total Erk5 panel appears to be spliced between lanes 7 and 8. Based on these different splicing patterns, the total Erk5 protein must have been detected on a different blot than p-Erk5, and thus it is not a valid loading control.

As noted above the p-Erk1/2 panel appears to be spliced between lanes 2 and 3 and between lanes 3 and 4. The corresponding total Erk1/2 panel does not appear to be spliced. Based on this splicing pattern, the total Erk1/2 protein must have been detected on a different blot than p-Erk1/2, and thus it is not a valid loading control.

The PAR2 panel appears to be spliced between lanes 1 and 2. Neither of the total protein controls (Erk5 or Erk1/2) appears to be spliced in the same location, and thus neither of those panels is a valid loading control for PAR2.

9. Figure S9B:
The p-EGFR panel appears to be spliced between lanes 2 and 3. The corresponding total EGFR panel does not appear to be spliced. Based on this splicing pattern, the total EGFR protein must have been detected on a different blot than p-EGFR, and thus it is not a valid loading control.

10. Figure S11B:
The IL-1β panel appears to be spliced between lanes 3 and 4. The corresponding GAPDH panel does not appear to be spliced. Based on this splicing pattern, GAPDH must have been detected on a different blot than IL-1β, and thus it is not a valid loading control.

The source data underlying the image panels in question were requested from the authors by the JACC Journals Ethics Board, but no data were available due to an ongoing investigation by Temple University.

Based on the number and the nature of the apparent image manipulations, the Ethics Board determined that the conclusions of the paper are not reliable. Thus, the Board decided to retract the paper.

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