Response to Letter Regarding Article, “MicroRNA-155 Exerts Cell-Specific Antiangiogenic but Proarteriogenic Effects During Adaptive Neovascularization”

We thank Dr Welten and colleagues for taking the time to comment on our recently published article.1

In their letter, Welten and colleagues express concern about the microRNA expression profile after the induction of hind-limb ischemia in mice, which differs in part from their own finding. We would like to point out that the techniques for femoral artery occlusion were different between our studies: We used a surgical ligation of the carefully dissected femoral artery to minimize unspecific trauma, whereas Welten et al used electrocoagulation, which could possibly alter microRNA (miR)-155 expression as a result of an increased inflammatory response. Because the complete microarray data of Welten et al seem not to be publicly available, a direct comparison of the results is difficult. However, our results are similar in that the overall alteration in microRNA expression at day 7 was less pronounced than at earlier time points. In addition, our results show that although miR-155 was among the top downregulated miRNAs at this time point, the overall change in expression was relatively modest (fold change, 0.49), similar to the fold change observed by Welten et al for miR-329. Indeed, in our previously published report on miRNA expression during the early phase of neovascularization at day 3, miR-155 was not among the top regulated genes at this earlier time point.2

We very much appreciate the recent article by Dr Welten and coworkers3 on the role of miR-329, which was published during the review process of our manuscript and was therefore not discussed. Their results show a moderate decrease in mean miR-329 expression levels at day 7, albeit with a large standard deviation, very similar to the fold change observed by Welten et al for miR-329. Indeed, in our previously published report on miRNA expression during the early phase of neovascularization at day 3, miR-155 was not among the top regulated genes at this earlier time point.2

We feel that the contributions of Dr Welten and colleagues and our own studies demonstrate that microRNA expression levels change very dynamically after femoral artery occlusion and that in the future the investigation of not only the temporal but also the spatial, cell-specific expression pattern will be a prerequisite for the understanding of miRNA function in adaptive neovascularization.

Disclosures

None.

Franziska Pankratz, PhD
Department of Cardiology and Angiology I
Heart Center
University of Freiburg
Freiburg, Germany

Department of Biology
Albert-Ludwigs-University
Freiburg, Germany

Xavier Bemtgen
Department of Cardiology and Angiology I
Heart Center
University of Freiburg
Freiburg, Germany

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Franziska Pankratz, Xavier Bemtgen, Robert Zeiser, Franziska Leonhardt, Sheena Kreuzaler, Ingo Hilgendorf, Christian Smolka, Thomas Helbing, Imo Hoefer, Jennifer S. Esser, Max Kustermann, Martin Moser, Christoph Bode and Sebastian Grundmann

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