

Supplemental information

**MicroRNA miR-29b regulates diabetic
aortic remodeling and stiffening**

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Supplemental Material

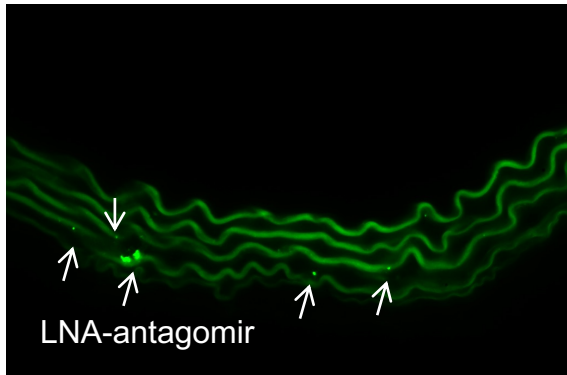


Figure S1: Aortic enrichment of anti-miR-29b antagomir. Representative image of an aortic section with FITC-labeled LNA-anti-miR-29b (light green) detected in the medial layer (characterized by the green autofluorescence of elastic lamellae). Original magnification is 400x. Scales bar represents 50 μ m.

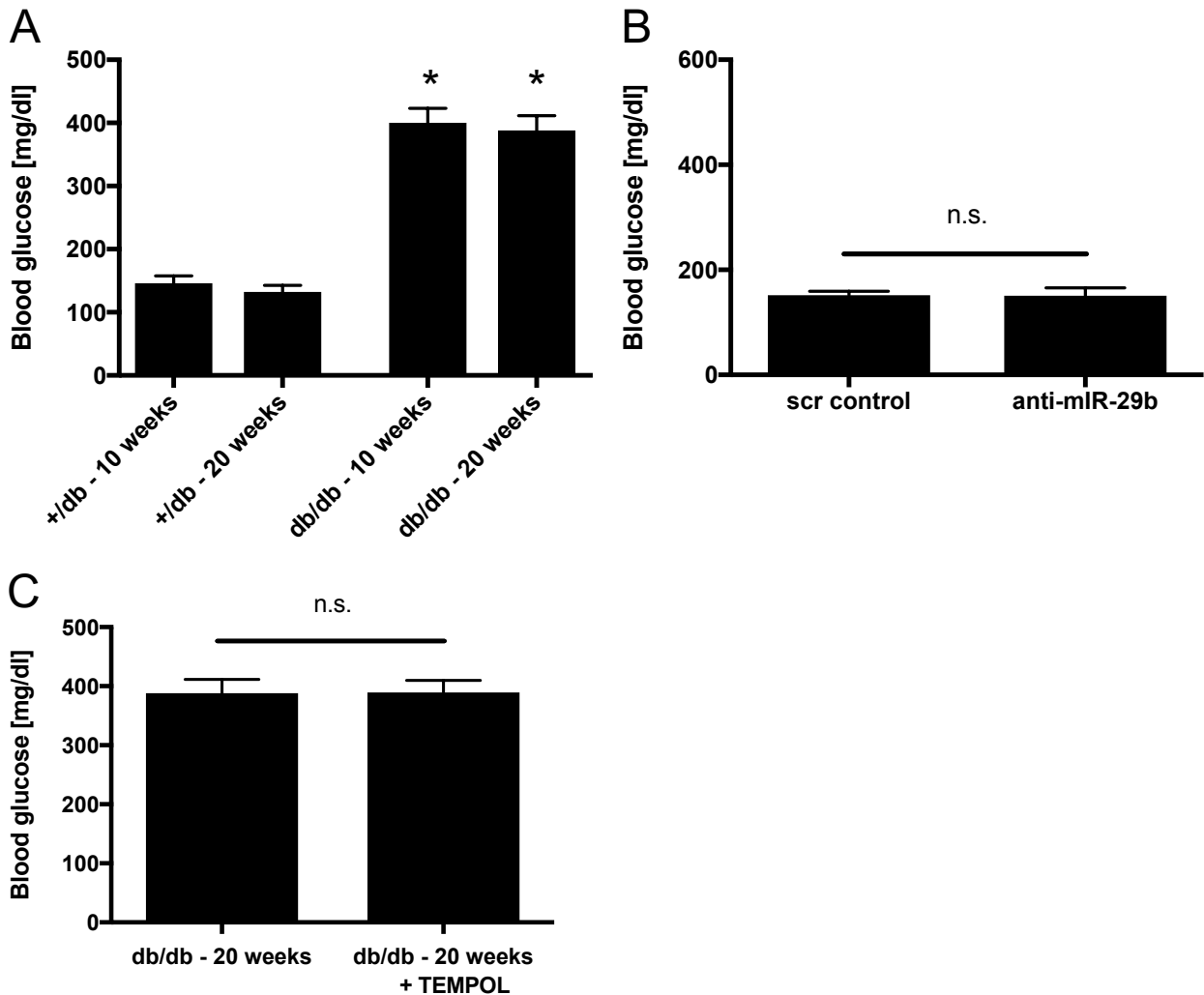


Figure S2: Blood glucose measurements. Blood glucose levels (fed) of (A) 10 and 20 weeks old db/db mice and heterozygous +/db controls, (B) 20-week-old anti-miR-29b treated +/db mice vs. scr controls, and (C) 20-week-old db/db mice with vs without 10 weeks of oral TEMPOL treatment. Values are mean \pm SEM. * indicates $p < 0.05$ vs +/db, n.s. non-significant

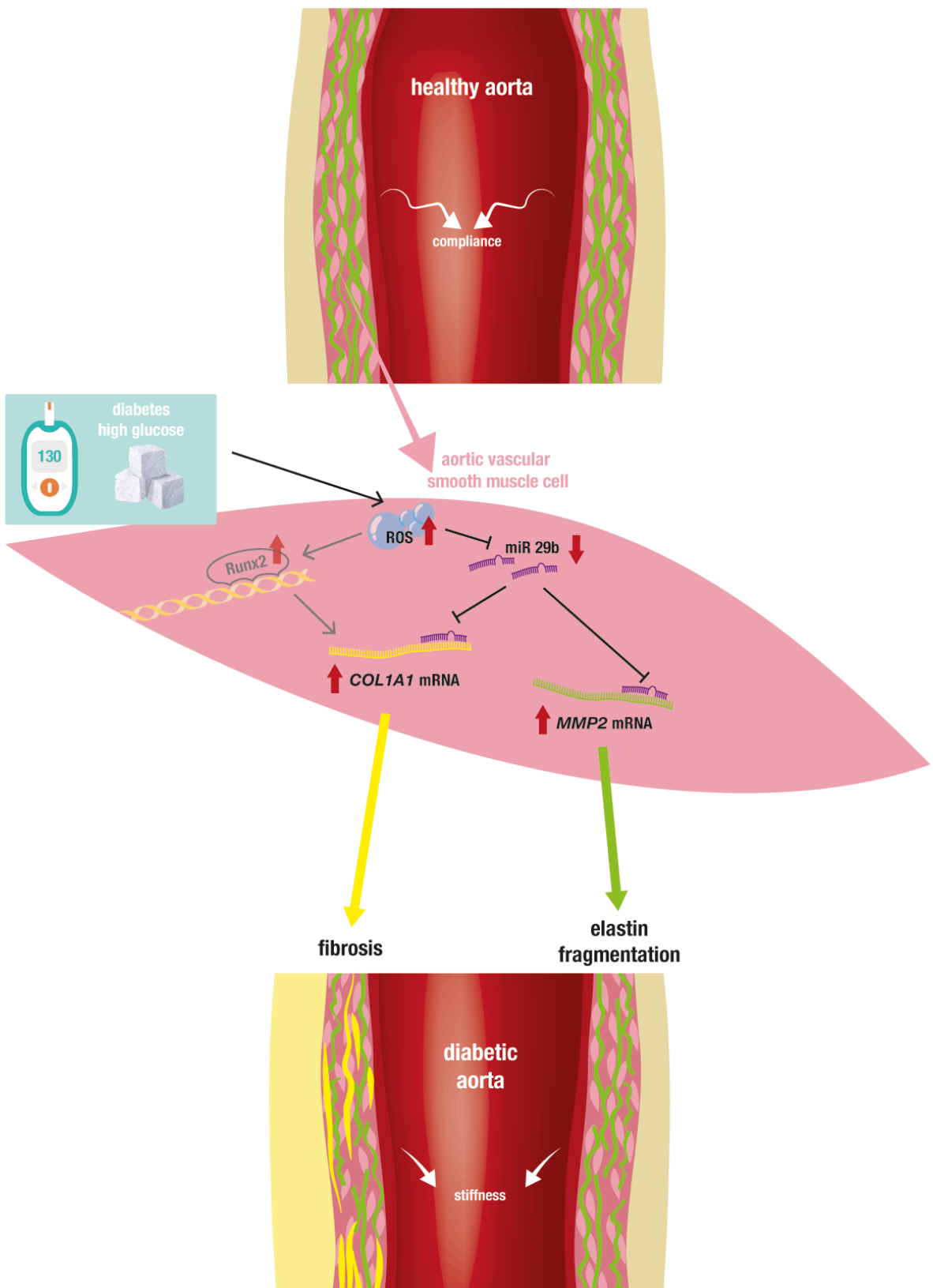


Figure S3: Proposed mechanism of diabetes induced downregulation of aortic miR-29b expression leading to aortic stiffening. Diabetes (hyperglycemia) triggers aortic reactive oxygen species (ROS) production, miR-29b downregulation and de-repression of miR-29b target genes *COL1A1* and *MMP2* inducing aortic fibrosis, elastin fragmentation and eventual structural aortic stiffening. In a parallel pathway, ROS additionally induce transcription factor Runx2 further promoting aortic fibrosis and stiffening, as previously reported¹.

References

1. Raaz, U, Schellinger, IN, Chernogubova, E, Warnecke, C, Kayama, Y, Penov, K, Hennigs, JK, Salomons, F, Eken, S, Emrich, FC, *et al.* (2015). Transcription Factor Runx2 Promotes Aortic Fibrosis and Stiffness in Type 2 Diabetes Mellitus. *Circ Res* **117**: 513-524.