Figure. S1

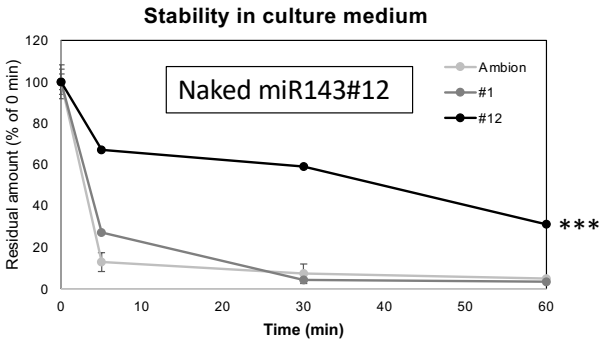
A

miR143#12

No	Type	Sequence
#1	Wild	S: 3′-GGUCUCUAGUCGUGACGUGGAGU-5′ AS: 5′-UGAGAUGAAGCACUGUAGCUCAGG-3′
#12	F/Ome	S: 3′-GGUCUCUAGUCGUGACGUGGAGU-5′ AS: 5′-U^G^AGAUGAAGCACUGUAGCUCA^dT^dT-3′

N: 2′-F RNA
N: 2′-Ome RNA
N: RMA
^: PS
_: mismatch

B



C

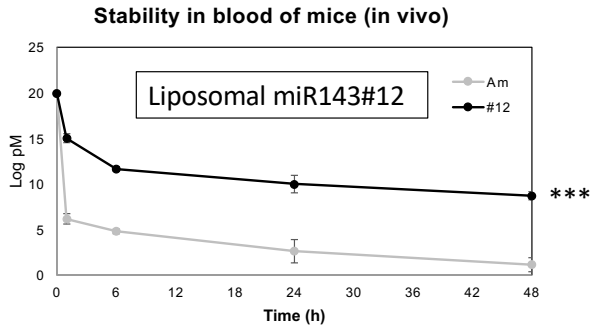
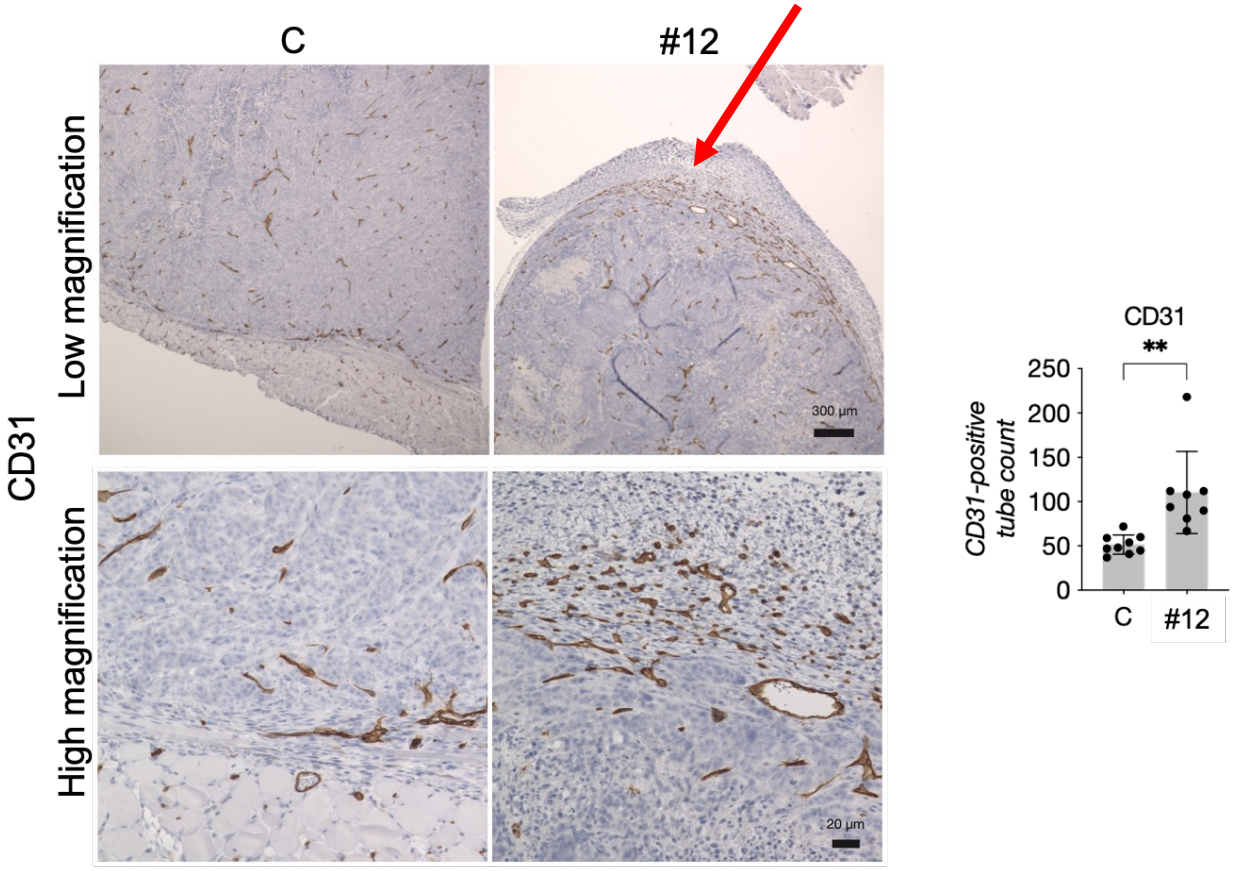


Figure S1: Characteristics of chemically modified miR143#12.
(A) RNA sequences of chemically modified miR143#12. #1 is the wild type of miR143-3p. miR143#12 is F/Ome-modified miR143-3p. Three mismatched nucleic acids of the sense strand were underlined. F RNA, Fluoro-RNA; Ome RNA, O-Methyl RNA; PS, phosphorothioate. (B) The remaining percentage of each naked miR143, Ambion (Applied Biosystems, Foster city, CA, USA), #1, or #12 remaining in the presence of FBS evaluated by performing RT-qPCR. The 0-min value of each miR-143 is indicated as 100%. The mean value was taken for each time. (C) The residual amount of miR143, Ambion, or #12 remaining in the blood of the mouse after its intravenous administration (1.4 mg/kg) via the tail vein was evaluated by performing RT-qPCR. miR143 was mixed with Lipofectamine RNAiMAX reagent and intravenously injected into mice, and blood was drawn at 1, 6, 24, and 48 hours. The mean value was taken for each time. The statistics was performed by using two-way ANOVA. Results are presented as the mean ± SD; *** $p < 0.001$.

Figure S2



Immunostaining of tumor tissues with anti-CD31. A red arrow indicates the route of injection with miR143#12. Scale bars represent 300 μm (low magnification) and 20 μm (high magnification).
The results of positive cells are shown
as the mean ± SD; ∗p < 0.05, ∗∗p < 0.01, ∗∗∗p < 0.001.

Figure S3

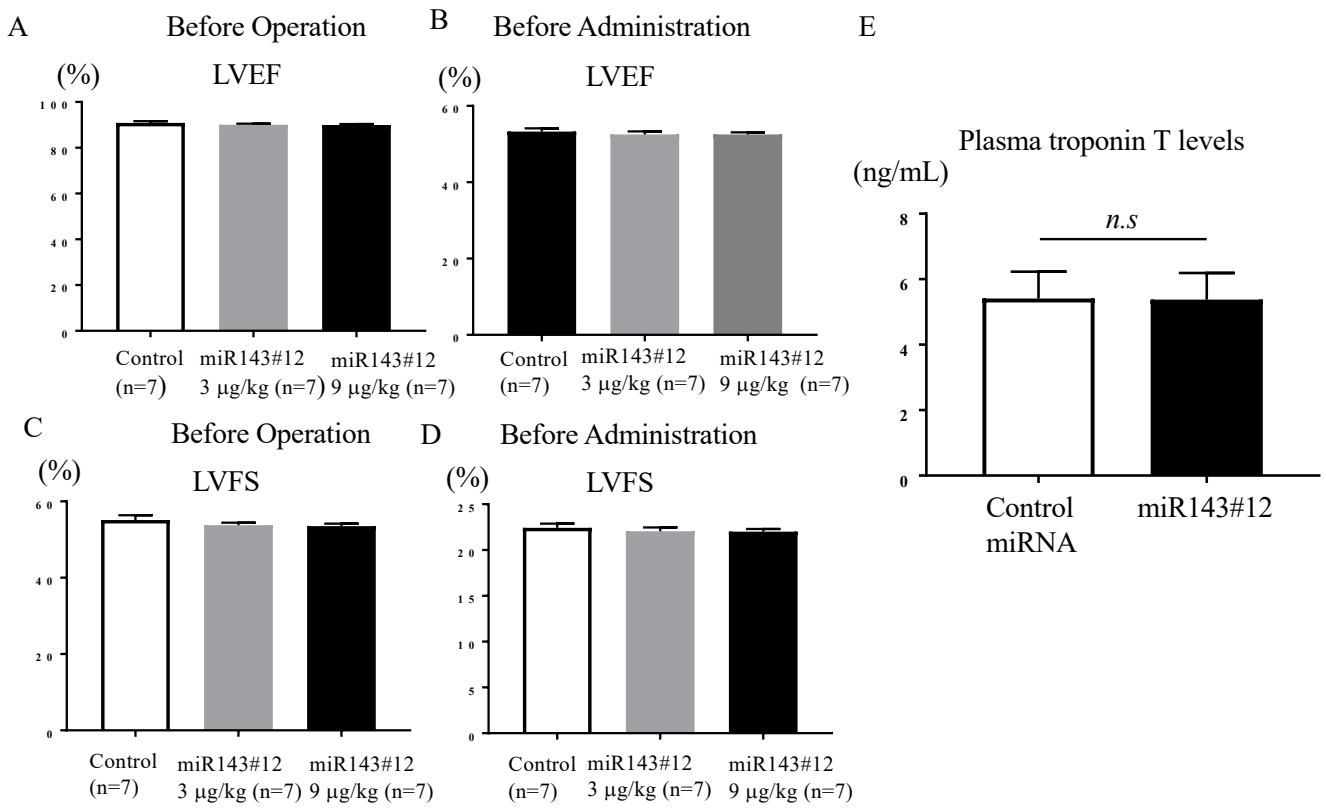


Figure S2: Cardiac function before surgery and immediately before the administration of miR143#12 or control miRNA in the rat AMI model

The LV ejection fraction (EF) in the control miRNA, 3 μg/kg and 9 μg/kg of miR143#12 groups were 90.9 ± 0.8, 90.1 ± 0.5, and 90.0 ± 0.4%, respectively, before surgery (A), and 53.3 ± 0.9, 52.5 ± 0.8, and 52.5 ± 0.5%, respectively, before administration (C). There was no significant difference in EF among the 3 groups before surgery or administration. LV fractional shortening (FS) in the control, 3 μg/kg and 9 μg/kg of miR143#12 groups were 55.1 ± 1.3, 53.8 ± 0.7, and 53.5 ± 0.6%, respectively, before surgery (B), and 22.4 ± 0.5, 22.0 ± 0.4, and 22.0 ± 0.3% before administration (D). There was no significant difference in FS among the 3 groups before surgery or administration. The assignment was validated by similar LVEF and LVFS before administration 1 h after AMI among the 3 groups. These results suggest that infarct sizes before the administration of miR143#12 were similar among the 3 groups.

A: EF before surgery in the control miRNA, 3 μg/kg and 9 μg/kg of miR143#12 groups.

B: FS before surgery in the control miRNA, 3 μg/kg and 9 μg/kg of miR143#12 groups.

C: EF before administration of the drug in the control miRNA, 3 μg/kg and 9 μg/kg of miR143#12 groups.

D: FS before administration of the drug in the control miRNA, 3 μg/kg and 9 μg/kg of miR143#12 groups.

E: Plasma troponin T levels 24 hours after AMI in the control miRNA and miR143#12 groups. Plasma troponin T levels, which closely correlate with infarct sizes (2), markedly increased 24 hours after AMI in both groups, with no significant differences among the groups, suggesting the equivalent induction of infarction before the administration of vehicle or miR143#12. The method used was described in detail in the Methods section.

Figure S4 Full electrophoretograms of the Western blot analysis presented in this study

Figure 4F/5A

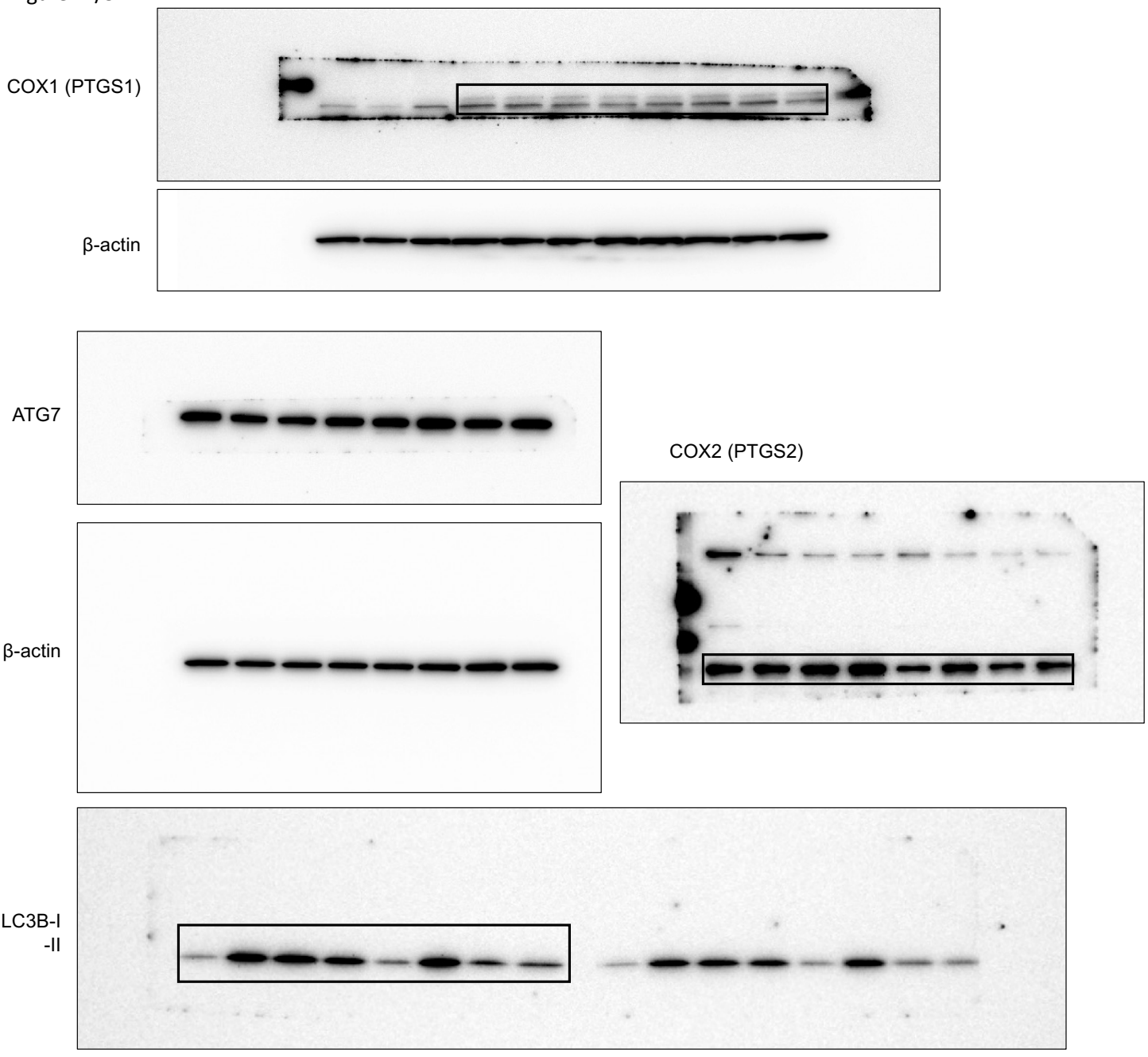


Figure 6A right

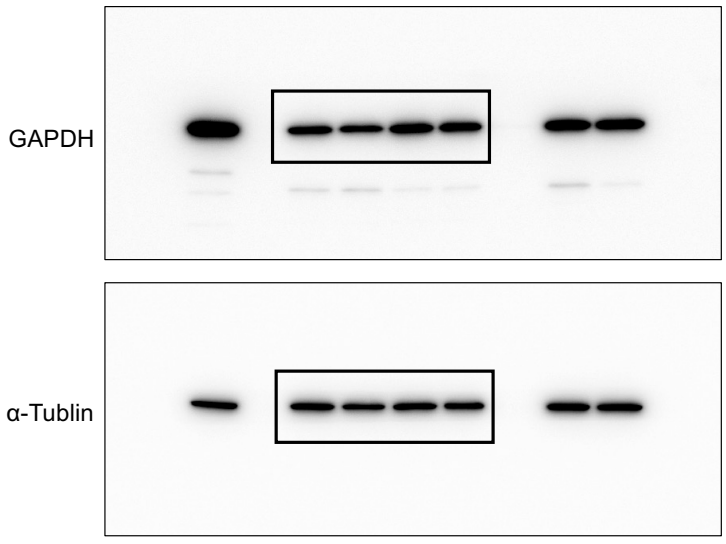


Figure 6A top

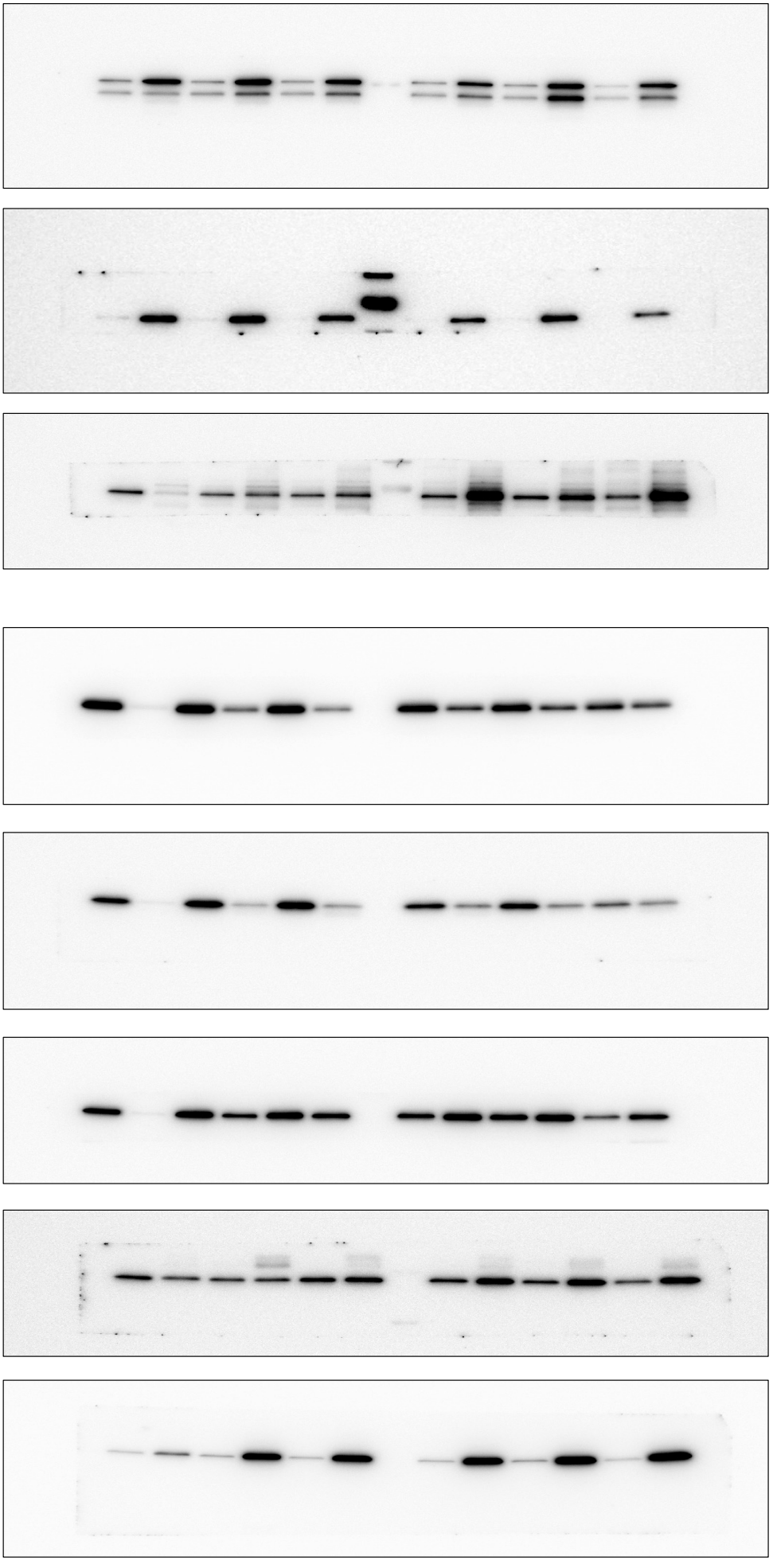


Figure 6A bottom