miR-216a-targeting theranostic nanoparticles promote proliferation of insulin-secreting cells in type 1 diabetes animal model

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Supplemental material

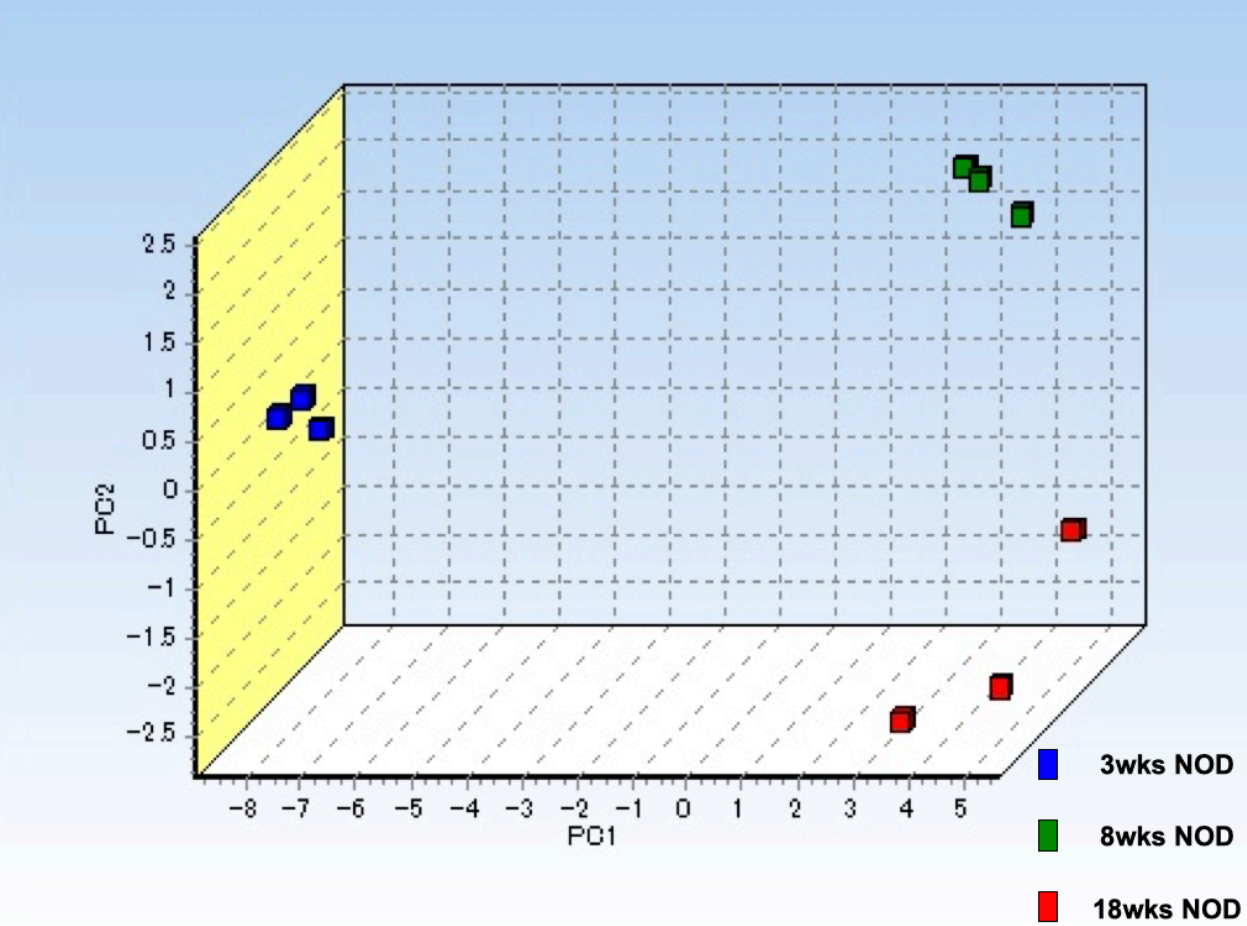
Supplemental tables:

Supplemental table 1: Sequences of the miRNA mimics, inhibitors and scramble controls for nanodrugs synthesis and ISH

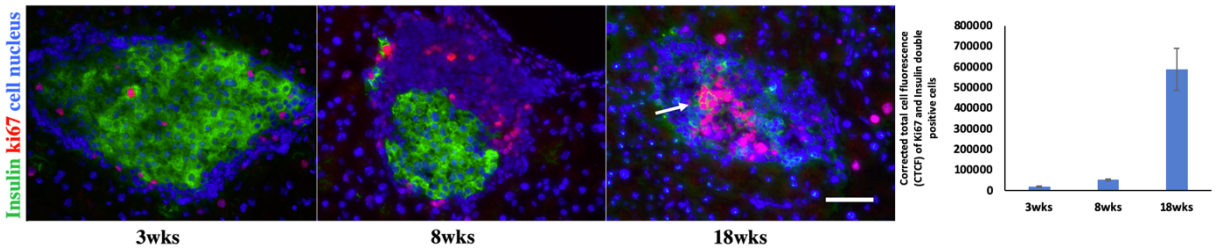
miRNA mimics, inhibitors, ISH probe	Sequences
miRNA-216a inhibitors	CACAGTTGCCAGCTGAGATT
negative control for inhibitors	GTGTAACACGTCTATACGCCCA
miRNA-216a mimics	UAAUCUCAGCUGGCAACUGUGA
scrambled control for mimics	UGGUUUACAUGUCGACUAAUU
miRNA-216a ISH probe	TCACAGTTGCCAGCTGAGATTA

Supplemental table 2: miRNA microarray data profiling of the islets from 3, 8 and 18-week-old NOD mice:
https://drive.google.com/file/d/1RSGUvNLcL4iwRXUyTeYsNfUcDZziRegy/view

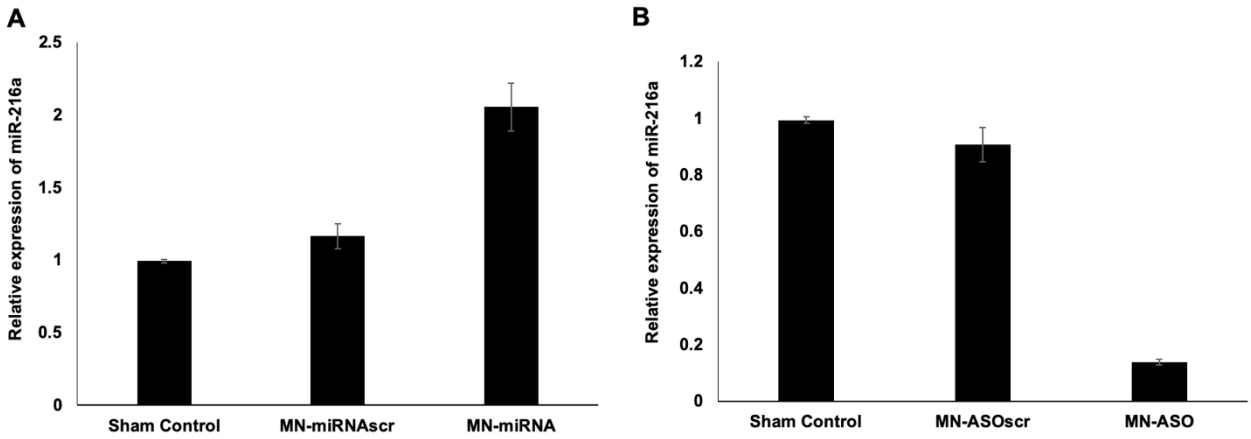
Supplemental figures:



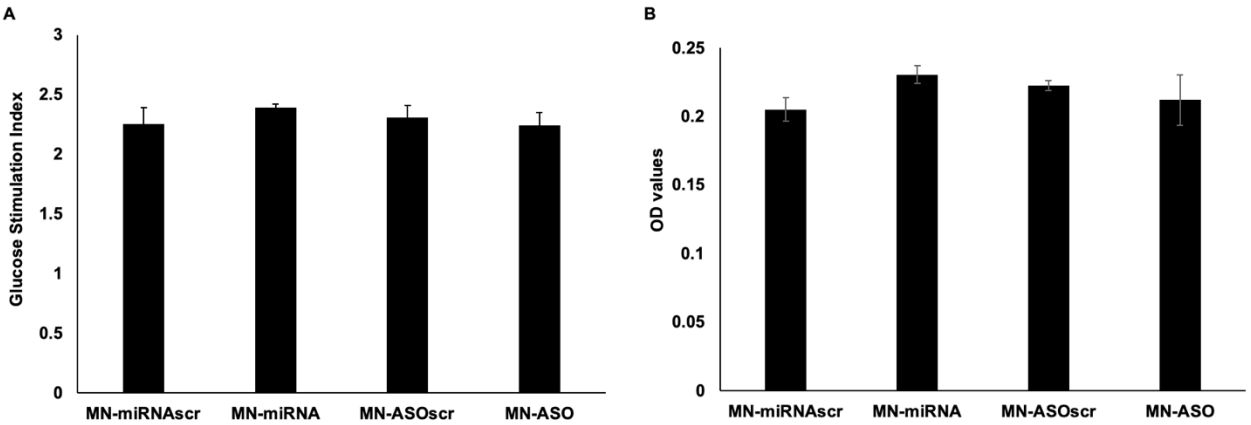
Supplemental Fig. 1. Principal components analysis (PCA) was used to reduce the dimensionality of multivariate data into a multi-dimensional space, allowing for clear visualization of the variation between the three microRNA microarray samples.



Supplemental Fig. 2. Immunostaining for insulin (green) and Ki67 (red) in pancreatic islets from 3-, 8- and 18-week old NOD mice (cell nucleus - blue, magnification bar = 50 μm); The arrow indicates double positive cells in damaged pancreatic islets of 18-week old NOD mice.

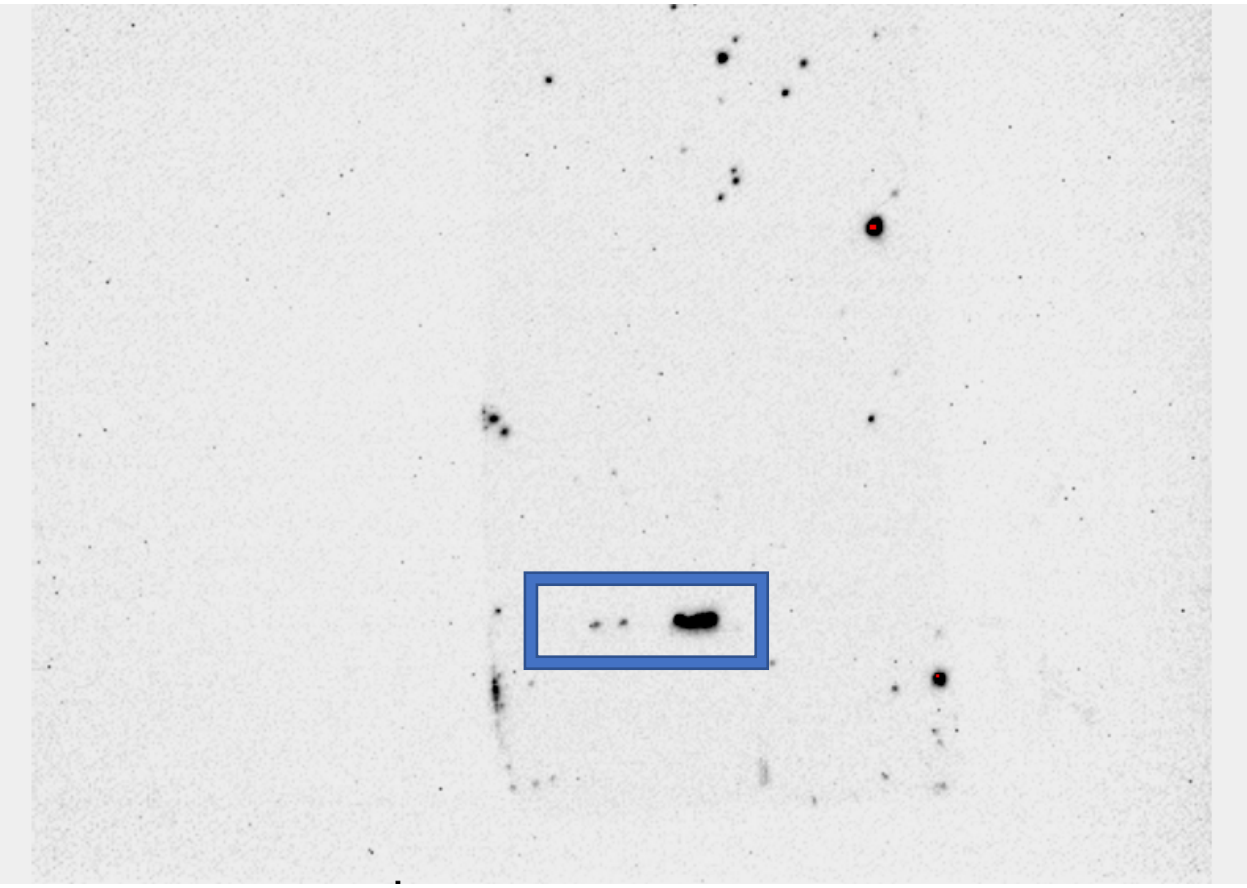


Supplemental Fig. 3. A. MN-miRNA mimic nanodrug increased miR-216a expression in beta-TC6 cells post incubation. B. MN-ASO inhibitor nanodrug significantly inhibited miR-216a in beta-TC6 cells compared to controls. These experiments were performed in triplicate.

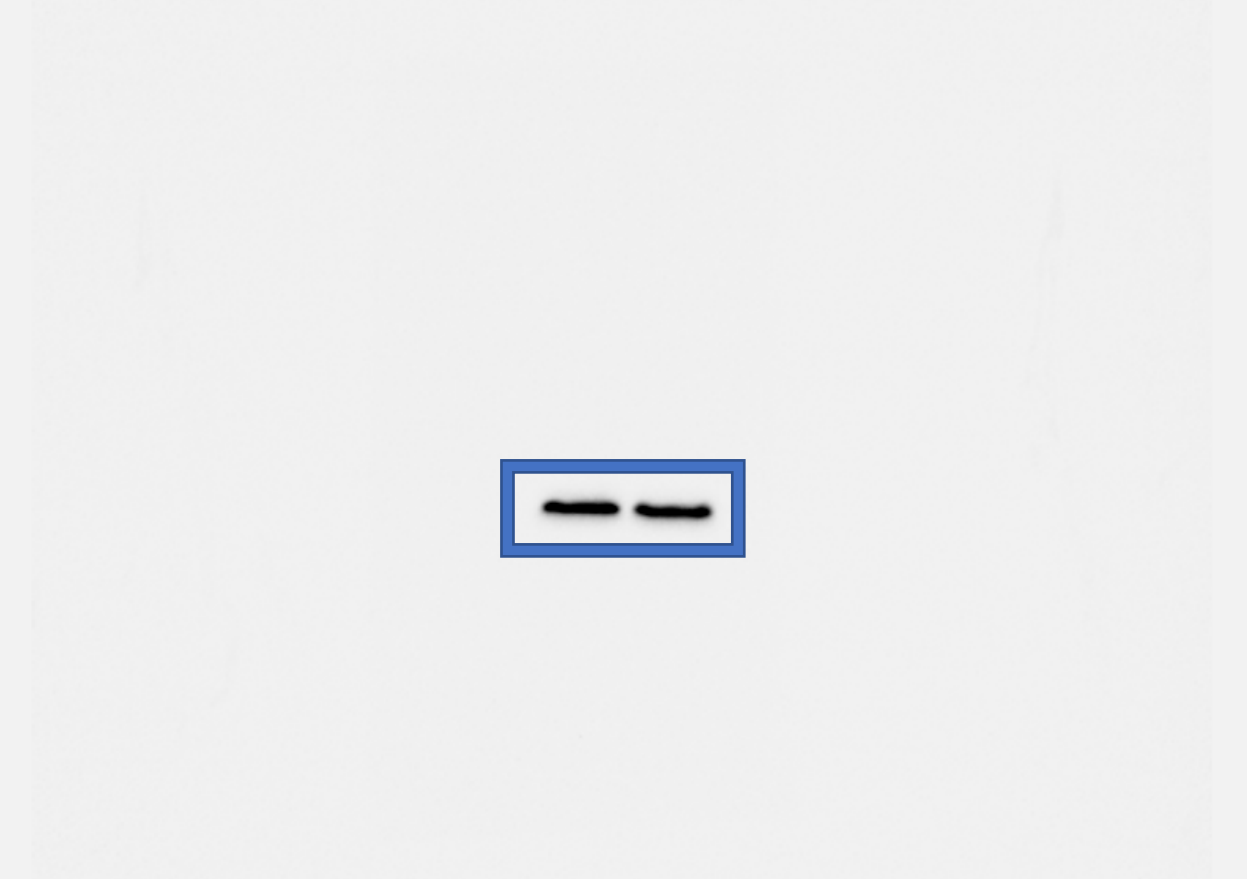


Supplemental Fig. 4. A. Glucose stimulation index of beta-TC6 cells was not significantly different in MN-miRNA-, MN-ASO-treated cells or controls. 4B: MTT assay revealed that incubation with MN-miRNA or MN-ASO nanodrugs did not cause significant toxicity in beta-TC6 cells.

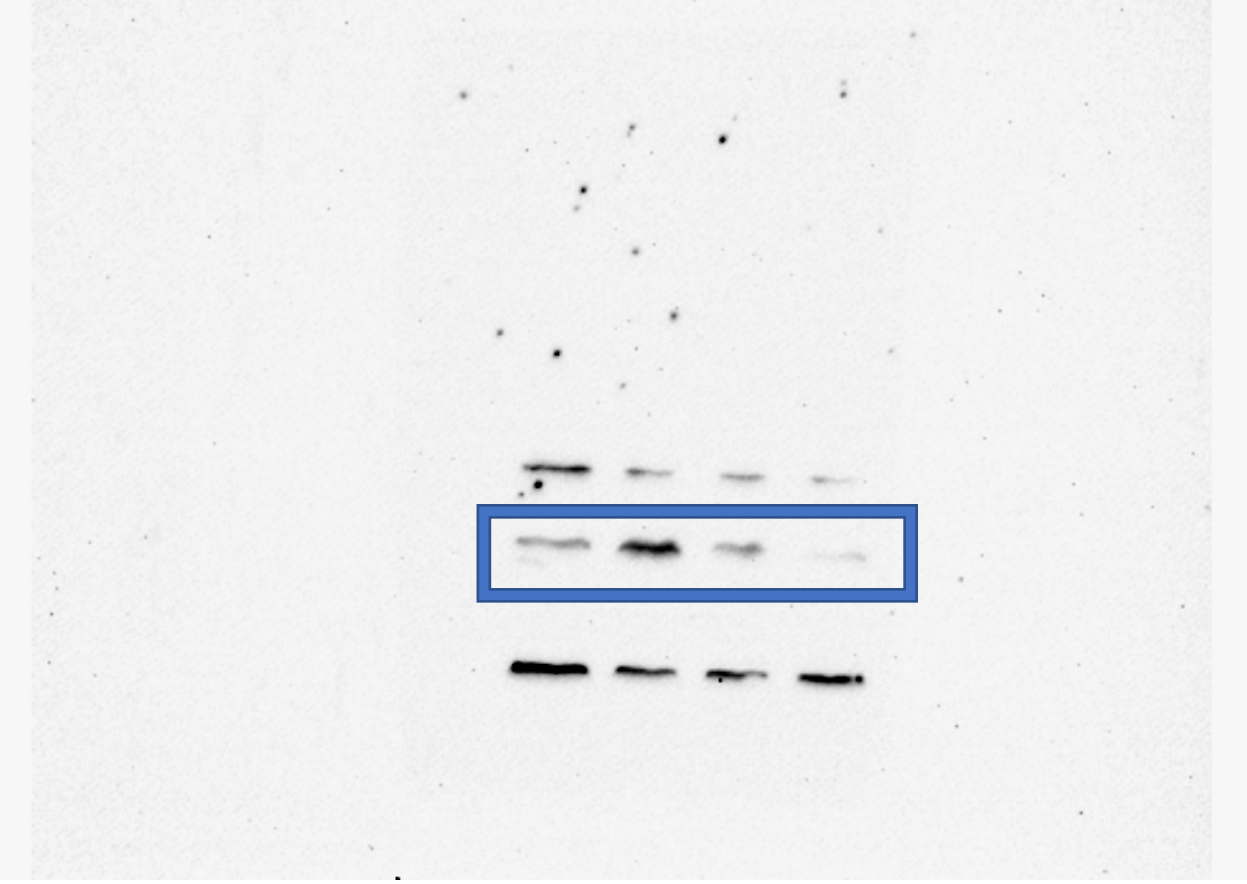
Original imaging of the Western Blot gels:



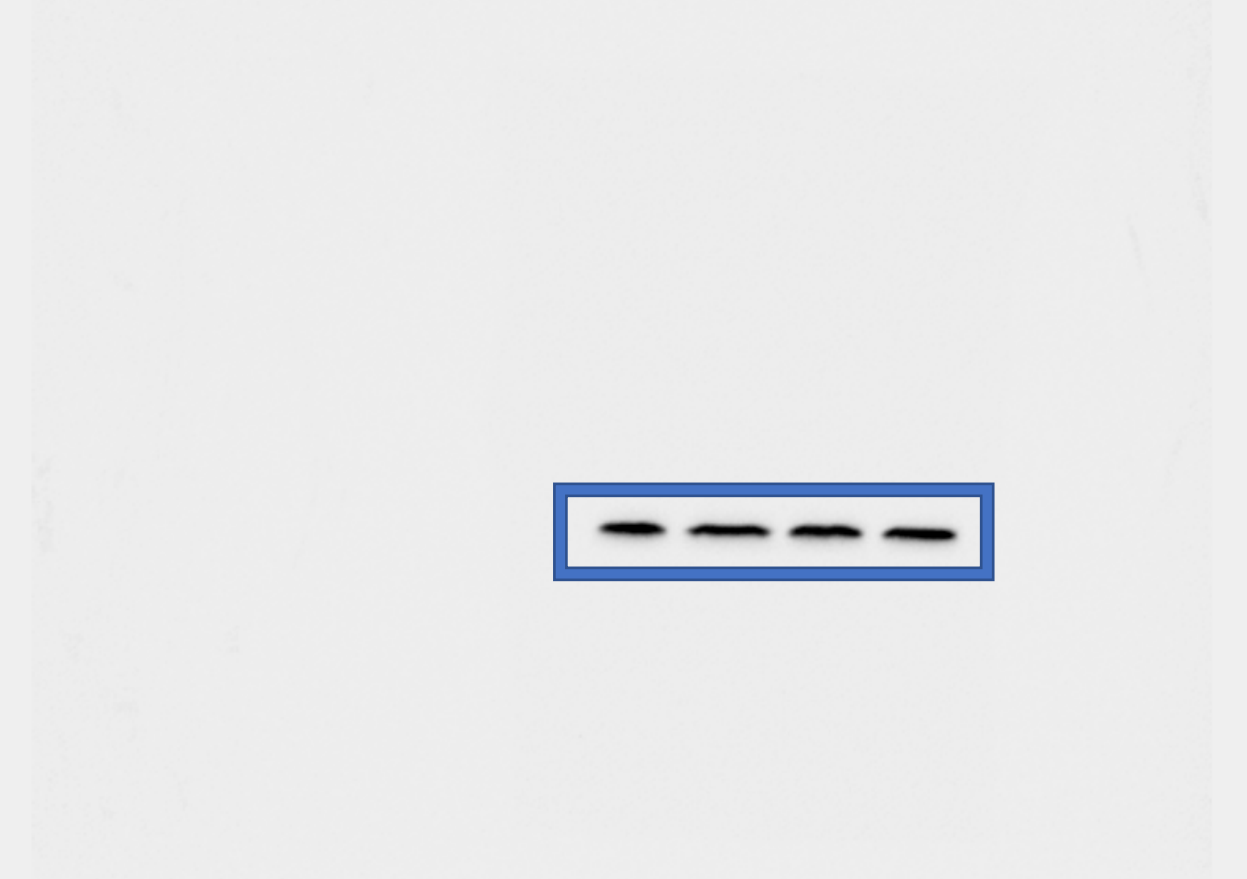
Full unedited gel/blot for Figure 4A top, PTEN expression



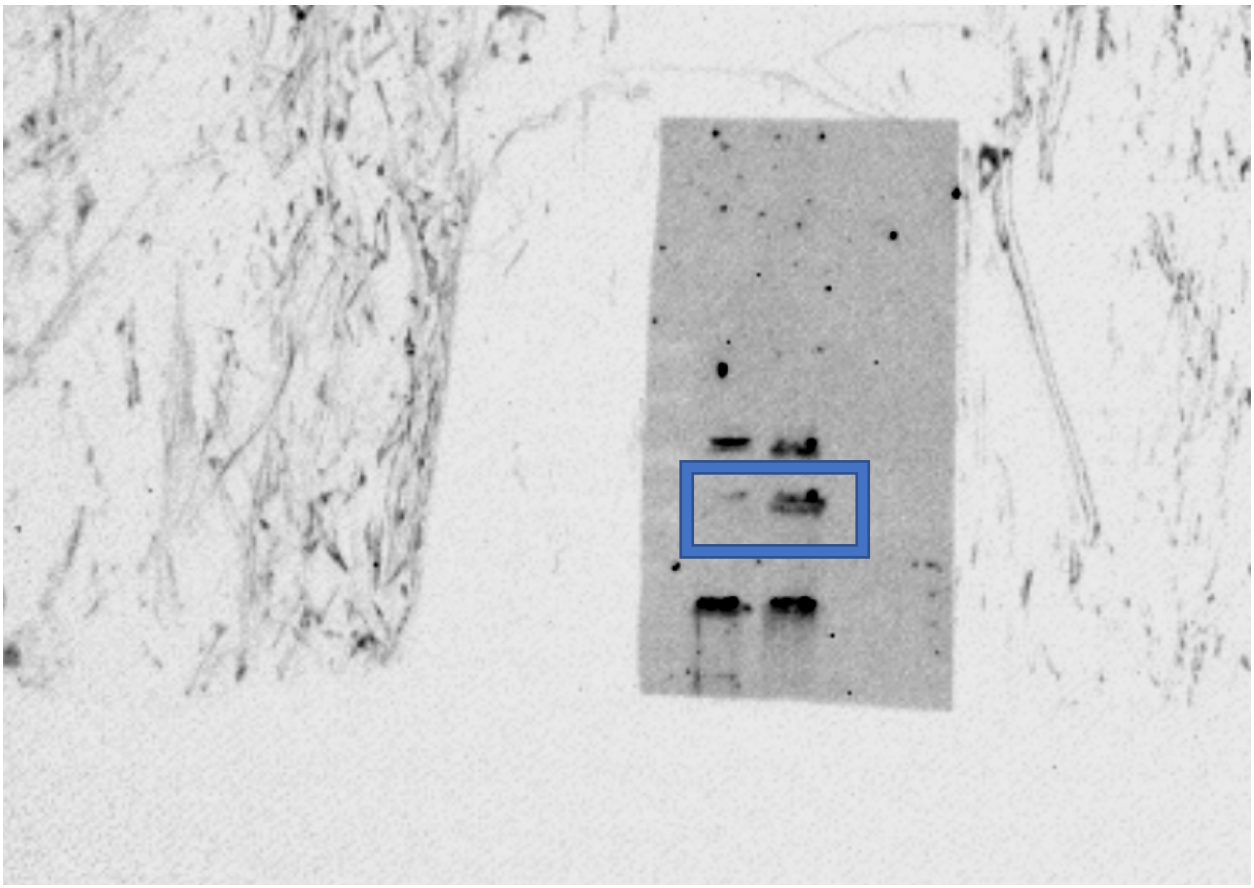
Full unedited gel/blot for Figure 4A top, actin expression



Full unedited gel/blot for Figure 4A bottom, PTEN expression



Full unedited gel/blot for Figure 4A bottom, actin expression



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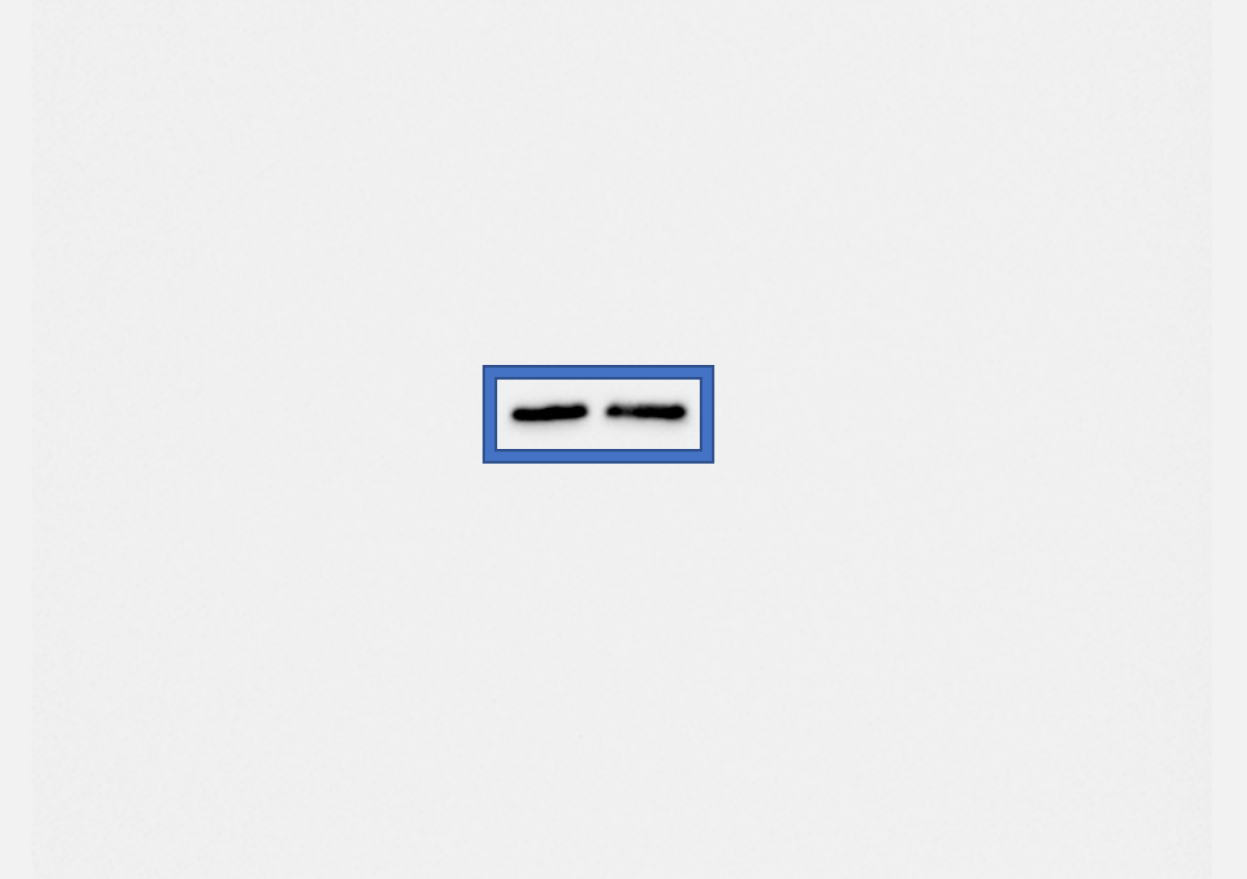

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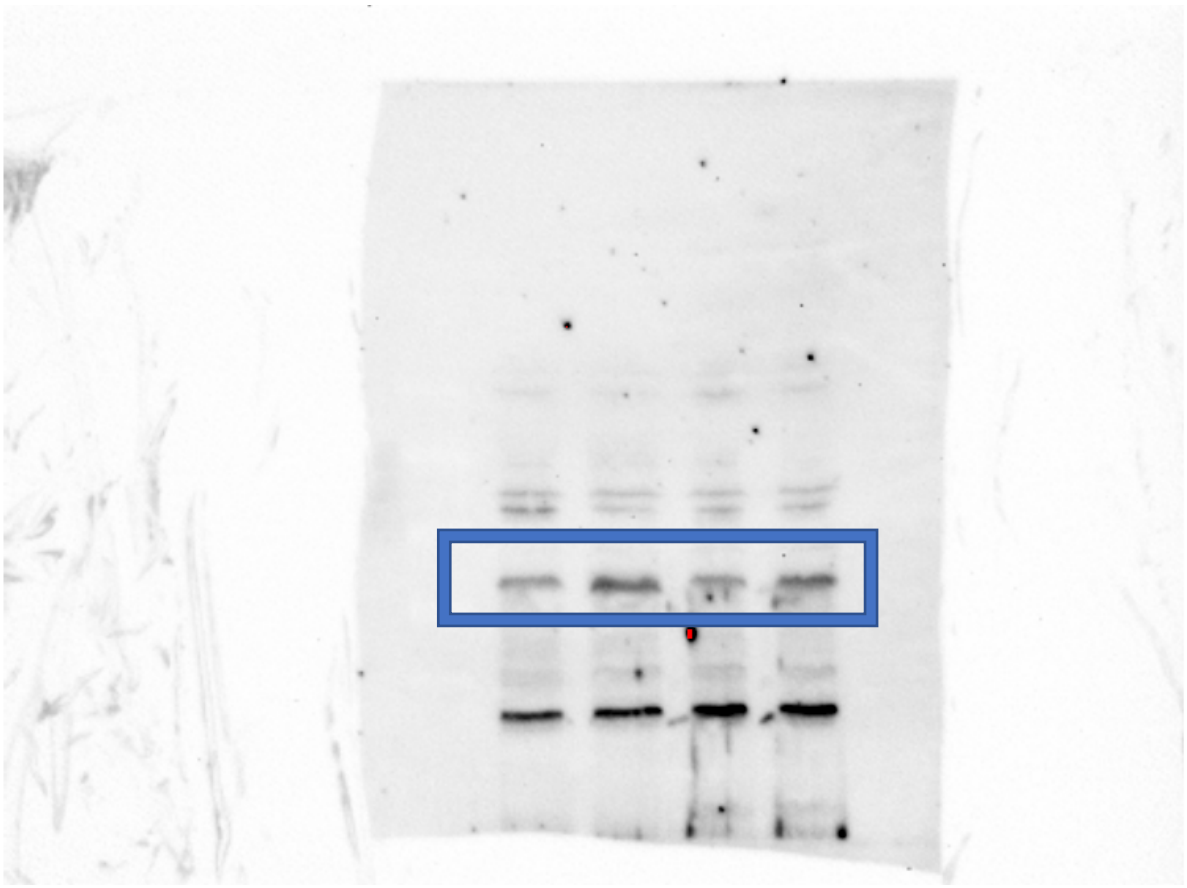

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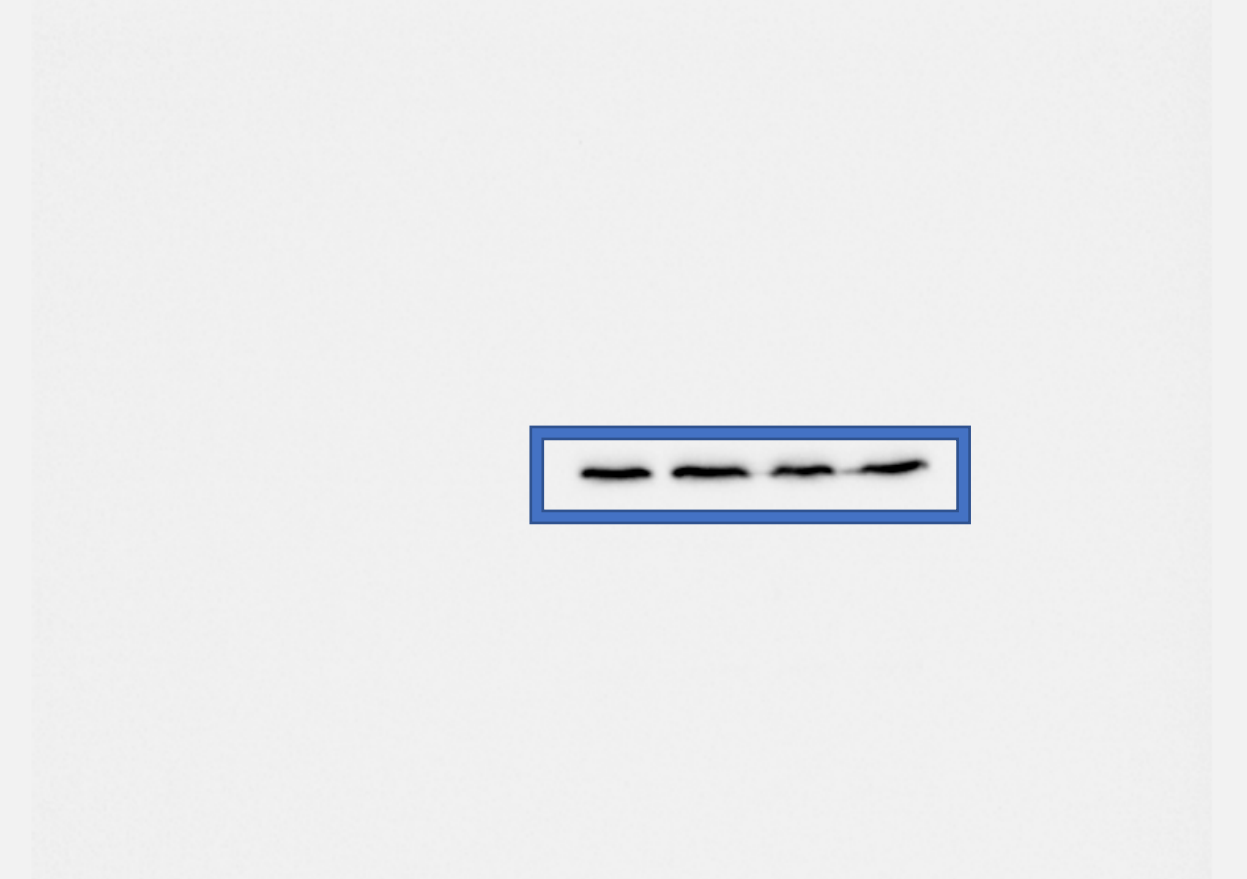

Full unedited gel/blot for Figure 4B bottom, actin expression