

## **Supplementary Information**

**The *DsbA-L* gene is associated with respiratory function of the elderly via its adiponectin multimeric or antioxidant properties**

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**Supplementary Table S1. Longitudinal associations of the combination of *DsbA-L* genotype and weight status with the values of FEV1/FVC and %FEV1 and the prevalence of FEV1/FVC <70% in the multivariable regression models based on the generalized estimating equations approach**

| Weight status | <i>DsbA-L</i> genotype | FEV1/FVC (%) |       |                     | %FEV1 (%) |       |                    | FEV1/FVC <70% |                |          |
|---------------|------------------------|--------------|-------|---------------------|-----------|-------|--------------------|---------------|----------------|----------|
|               |                        | B*           | SE    | <i>P</i>            | B*        | SE    | <i>P</i>           | OR*           | 95% CI         | <i>P</i> |
| Normal-weight | G/G                    | 0            |       |                     | 0         |       |                    | 1             |                |          |
|               | G/T                    | -2.805       | 0.804 | <0.001 <sup>†</sup> | -3.073    | 2.143 | 0.152              | 3.227         | 1.266 - 8.230  | 0.014    |
|               | T/T                    | 0.343        | 1.743 | 0.844               | -2.258    | 5.299 | 0.670              | 0.390         | 0.049 - 3.086  | 0.372    |
| Overweight    | G/G                    | 0            |       |                     | 0         |       |                    | 1             |                |          |
|               | G/T                    | -0.798       | 0.928 | 0.390               | -0.690    | 2.426 | 0.776              | 1.609         | 0.595 - 4.351  | 0.348    |
|               | T/T                    | -4.638       | 1.968 | 0.018               | -12.550   | 4.339 | 0.004 <sup>†</sup> | 5.702         | 1.335 - 24.357 | 0.019    |

\* Adjusted by age, gender, BMI, smoking status. † Statistical significance remained following the use of Bonferroni's correction. *DsbA-L*, disulfide bond-forming oxidoreductase A-like protein; BMI, body mass index; %FEV1, percent predicted forced expiratory volume in 1 second; OR, odds ratio; CI, confidence interval; SE, standard error.

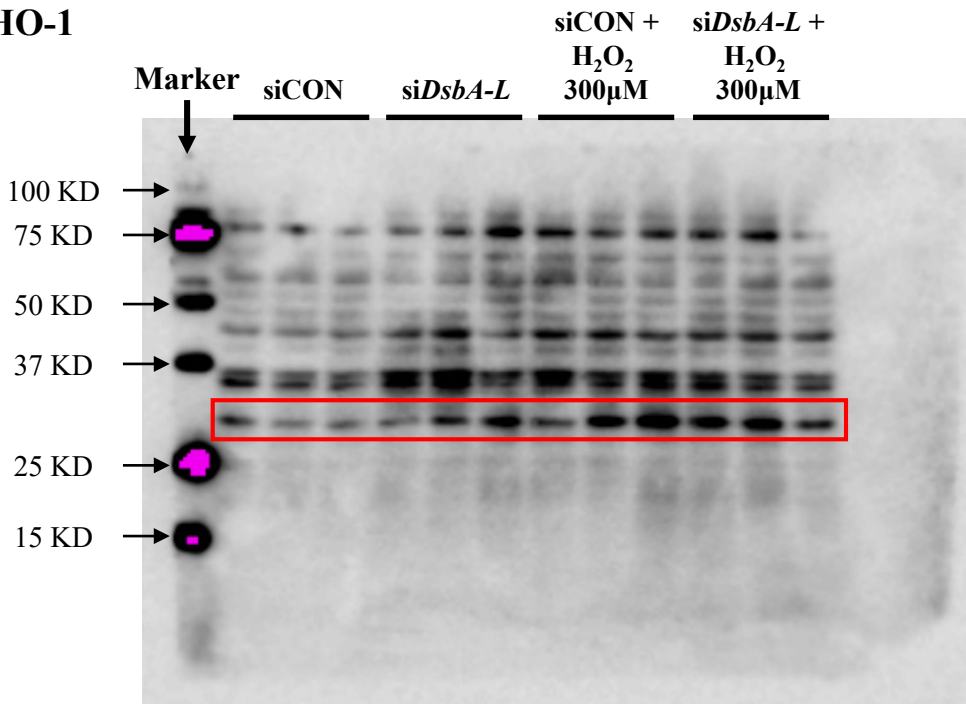
**Supplementary Table S2. The bootstrap analysis of the structural equation model**

|               |   |                            | Estimates |        | Bootstrap analysis |       |                |       |
|---------------|---|----------------------------|-----------|--------|--------------------|-------|----------------|-------|
|               |   |                            | $\beta$   | P      | Mean               | SE    | 95% CI         | P     |
| Oxidized HSA  | ← | Overweight                 | 0.135     | 0.015  | 0.134              | 0.055 | 0.022, 0.241   | 0.020 |
| HMW/total APN | ← | Overweight                 | -0.142    | 0.009  | -0.145             | 0.056 | -0.257, -0.037 | 0.010 |
| Oxidized HSA  | ← | <i>DsbA-L</i> T allele     | 0.144     | 0.009  | 0.144              | 0.054 | 0.041, 0.250   | 0.012 |
| HMW/total APN | ← | <i>DsbA-L</i> T/T genotype | -0.115    | 0.039  | -0.114             | 0.050 | -0.211, -0.020 | 0.015 |
| FEV1/FVC <70% | ← | <i>DsbA-L</i> T allele     | 0.119     | 0.025  | 0.120              | 0.054 | 0.018, 0.235   | 0.019 |
| FEV1/FVC      | ← | <i>DsbA-L</i> T allele     | -0.125    | 0.016  | -0.126             | 0.052 | -0.228, -0.026 | 0.014 |
| %FEV1         | ← | <i>DsbA-L</i> T/T genotype | -0.104    | 0.041  | -0.102             | 0.047 | -0.192, -0.008 | 0.032 |
| FEV1/FVC <70% | ← | Ever-smoking status        | 0.106     | 0.015  | 0.107              | 0.046 | 0.020, 0.197   | 0.010 |
| %FEV1         | ← | Ever-smoking status        | -0.175    | <0.001 | -0.175             | 0.050 | -0.269, -0.077 | 0.003 |

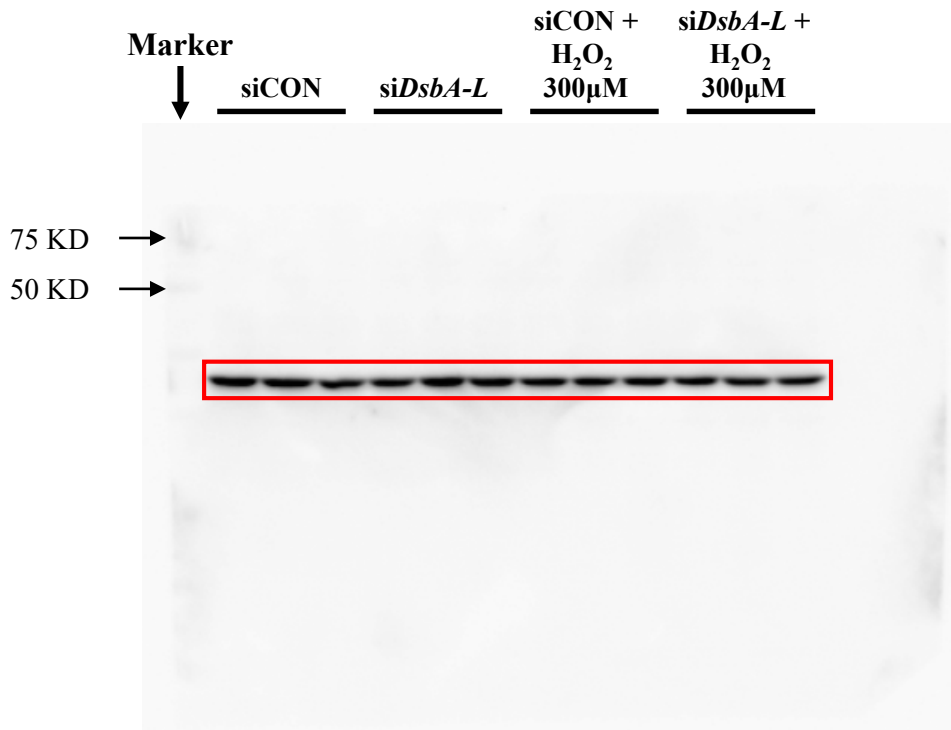
$\beta$ , partial regression coefficient; SE, standard error; HSA, human serum albumin; HMW, high molecular weight; APN, adiponectin; FEV1: percent predicted forced expiratory volume in 1 second; FVC, percent predicted forced vital capacity; *DsbA-L*, disulfide bond-forming oxidoreductase A-like protein.

# Supplementary Figure S1. Full unedited gel for Figure 4-C

## HO-1

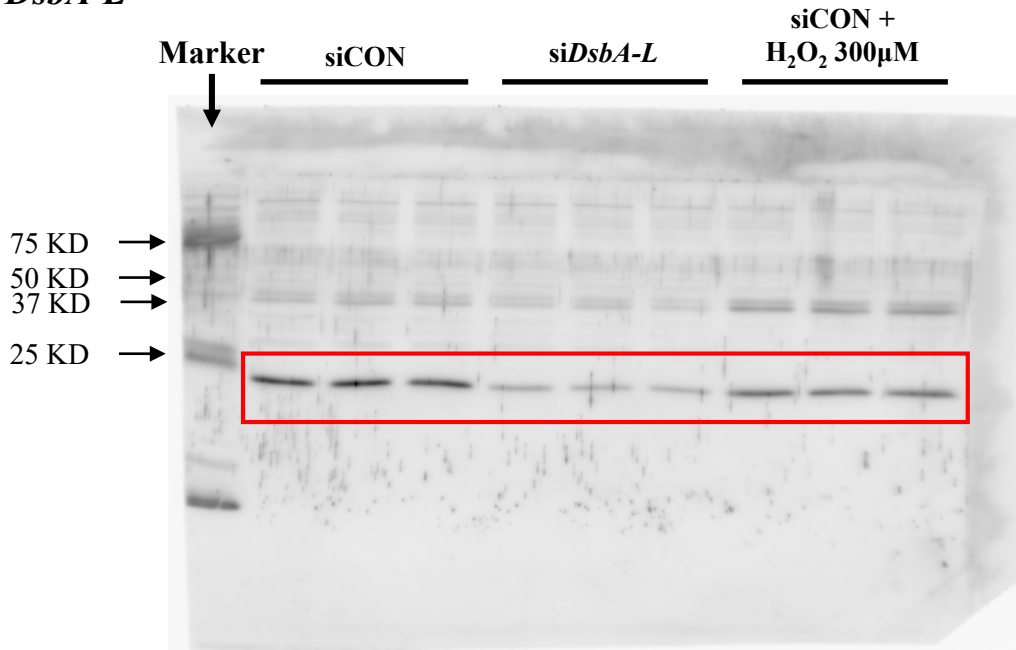


## Actin

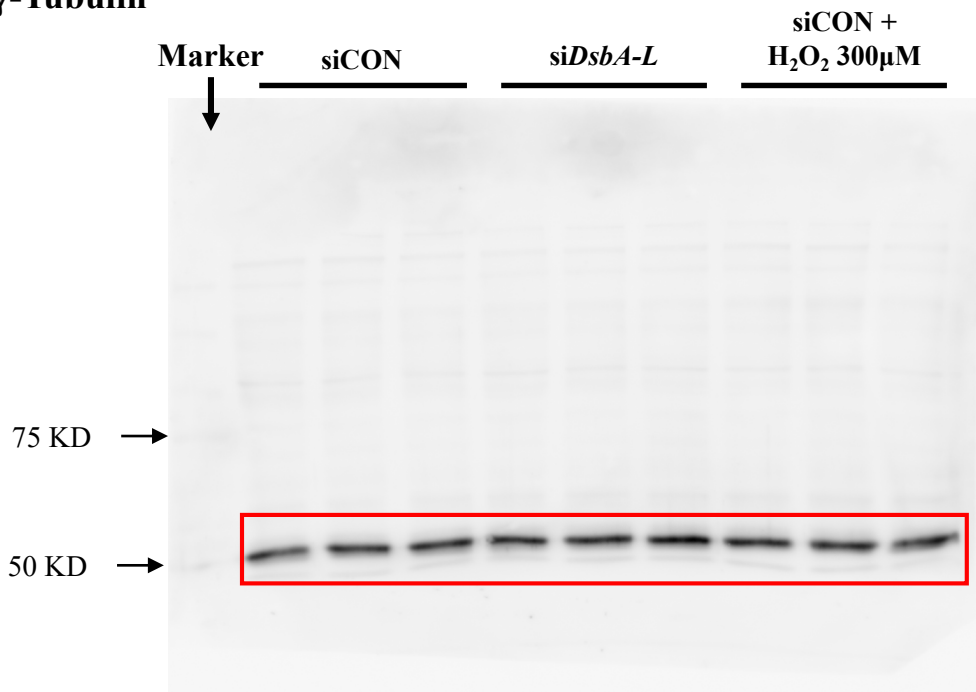


**Supplementary Figure S2. Full unedited gel for Figure 4-E**

*DsbA-L*

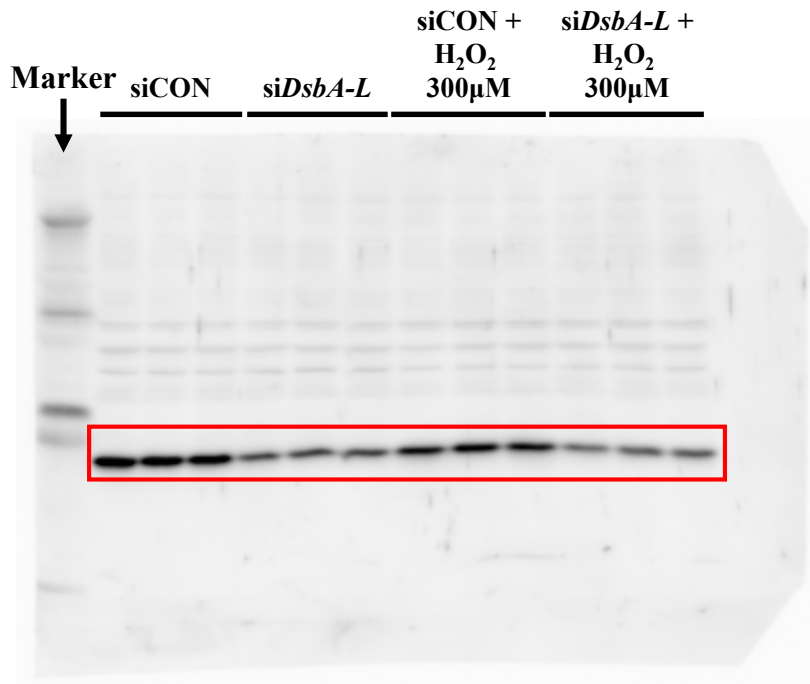


$\gamma$ -Tubulin

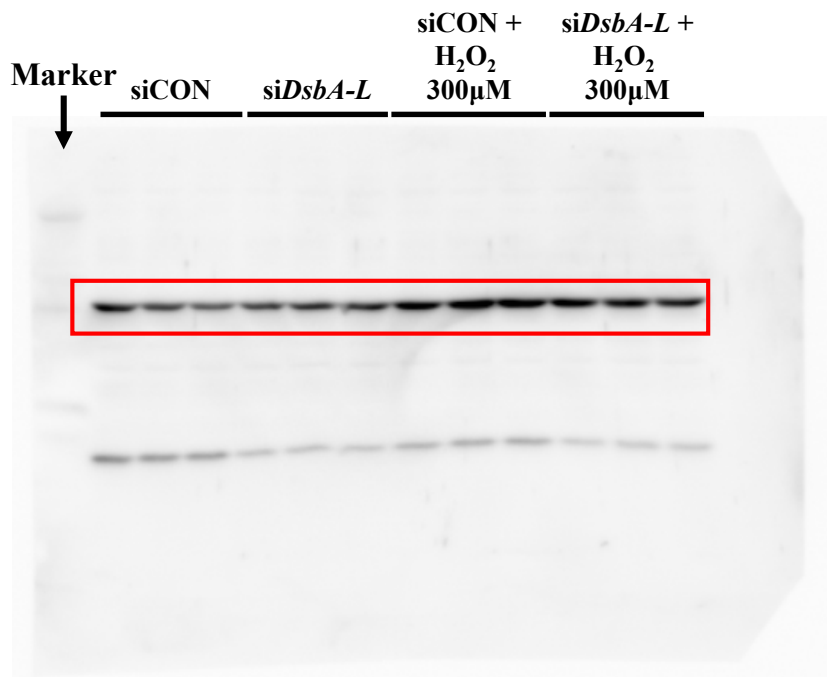


**Supplementary Figure S3. Full unedited gel for Figure 4-F**

*DsbA-L*

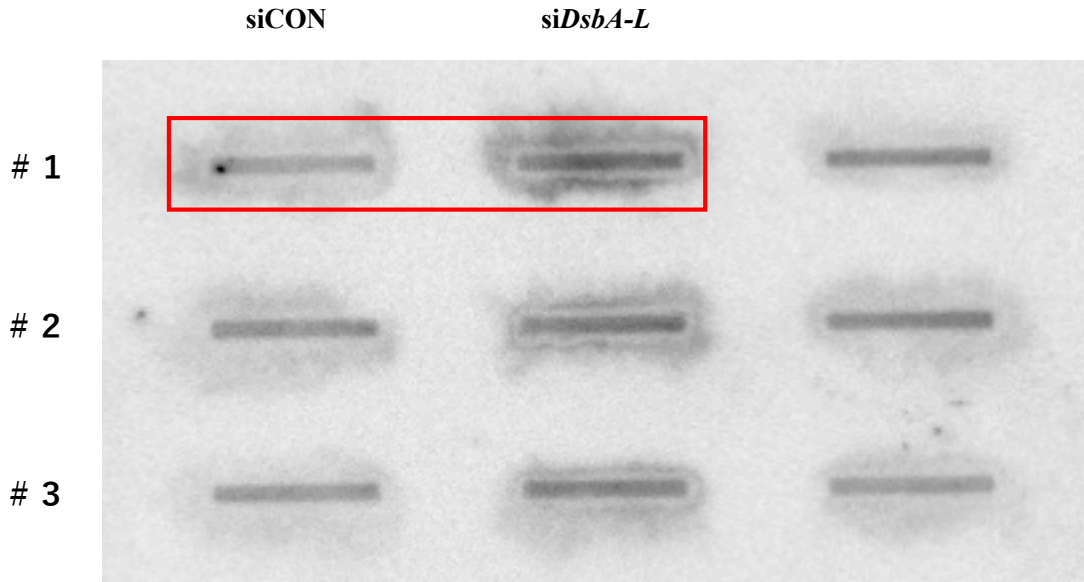


$\gamma$ -Tubulin



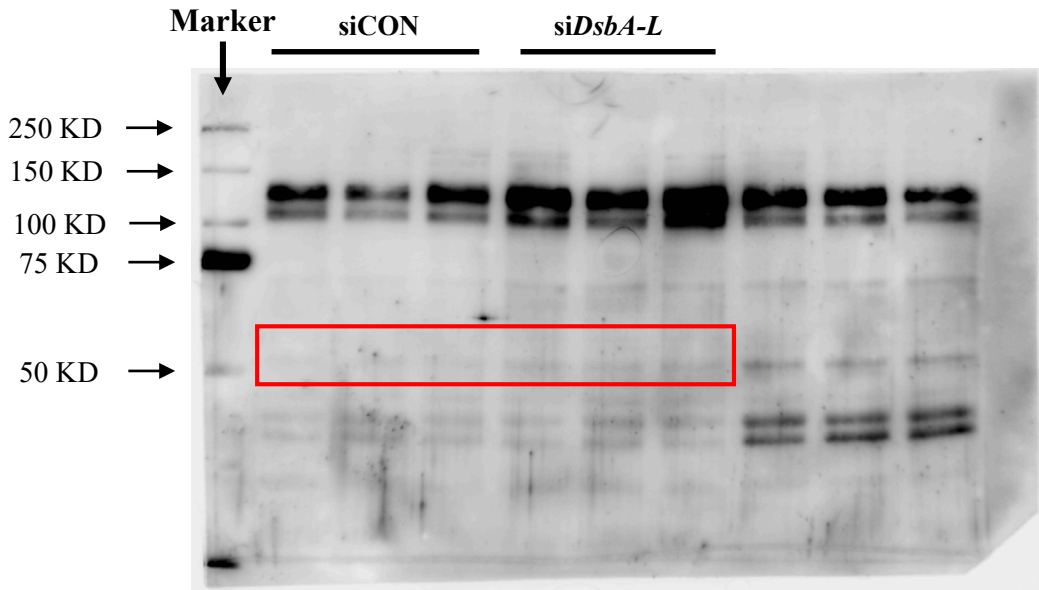
**Supplementary Figure S4. Full unedited gel for Figure 5-B**

**MUC5AC protein**

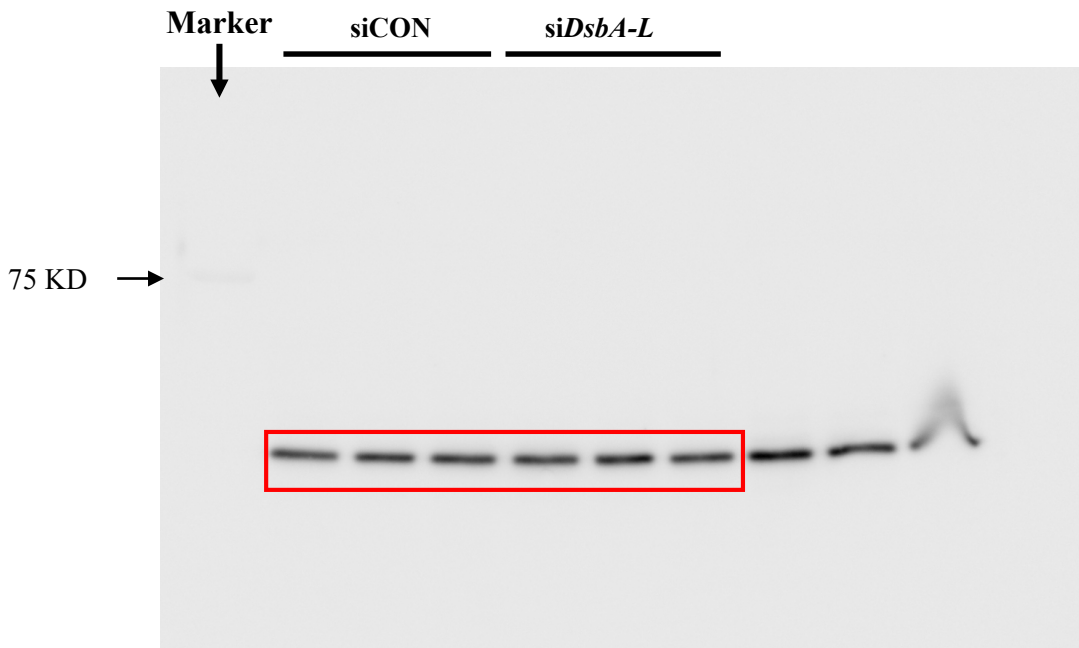


**Supplementary Figure S5. Full unedited gel for Figure 5-C**

**p-JNK**



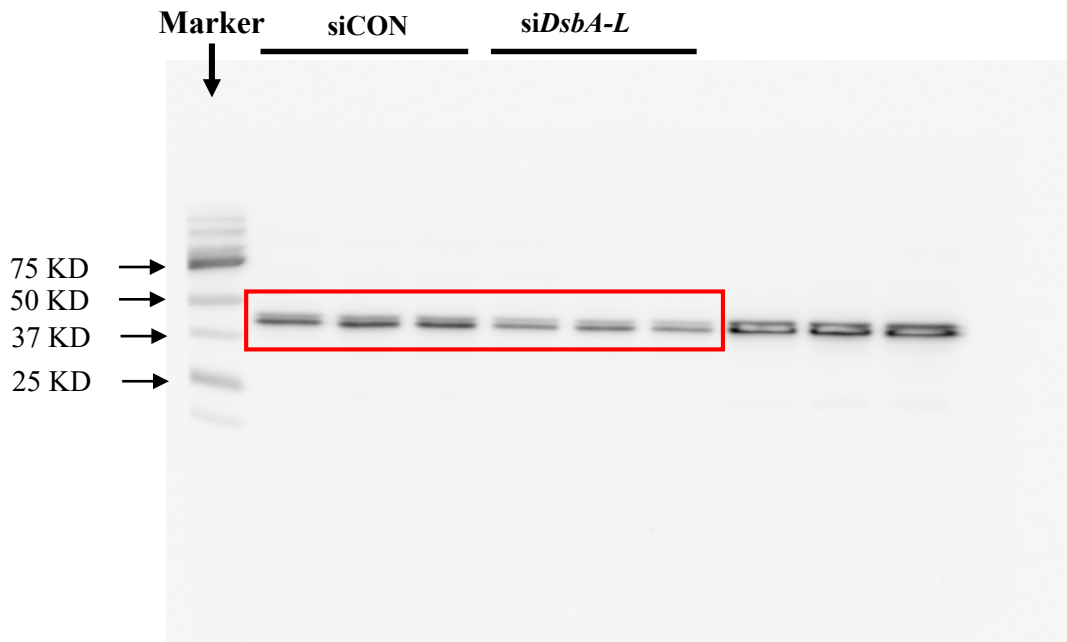
**p-p38**



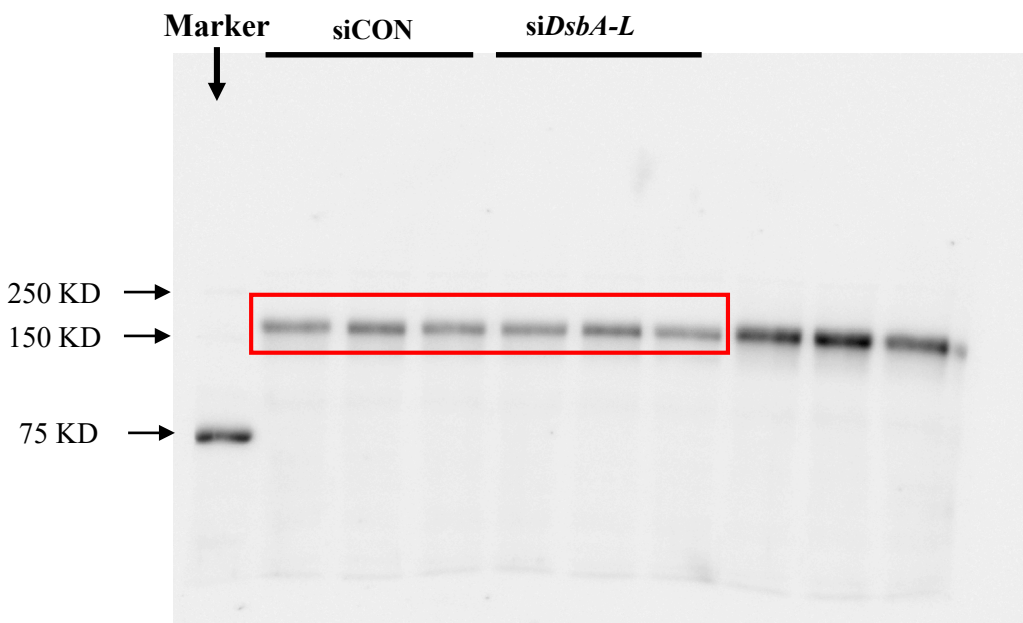


**Supplementary Figure S6. Full unedited gel for Figure 5-C**

**p-ERK**

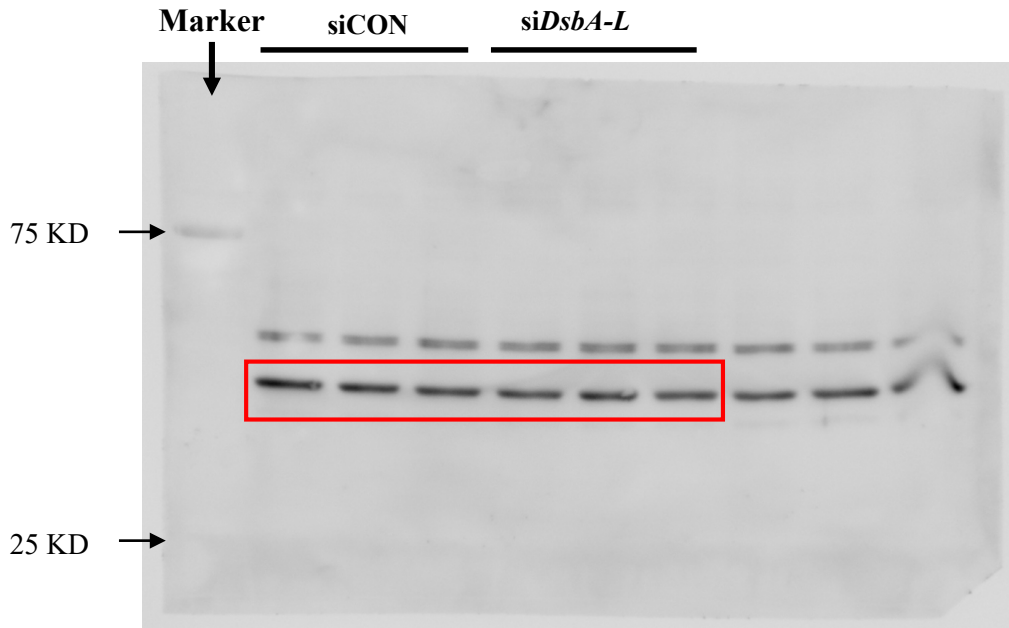


**p-EGFR**



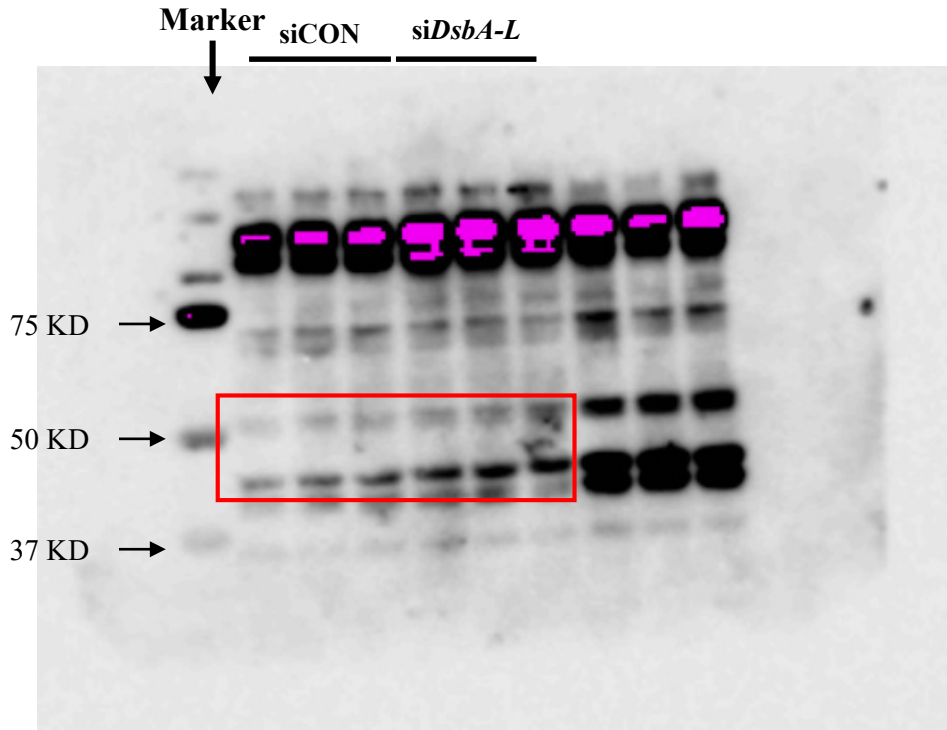
**Supplementary Figure S7. Full unedited gel for Figure 5-C**

**Actin**



**Supplementary Figure S8. Full unedited gel for Figure 5-D**

**p-JNK**



**Actin**

