Figure S1

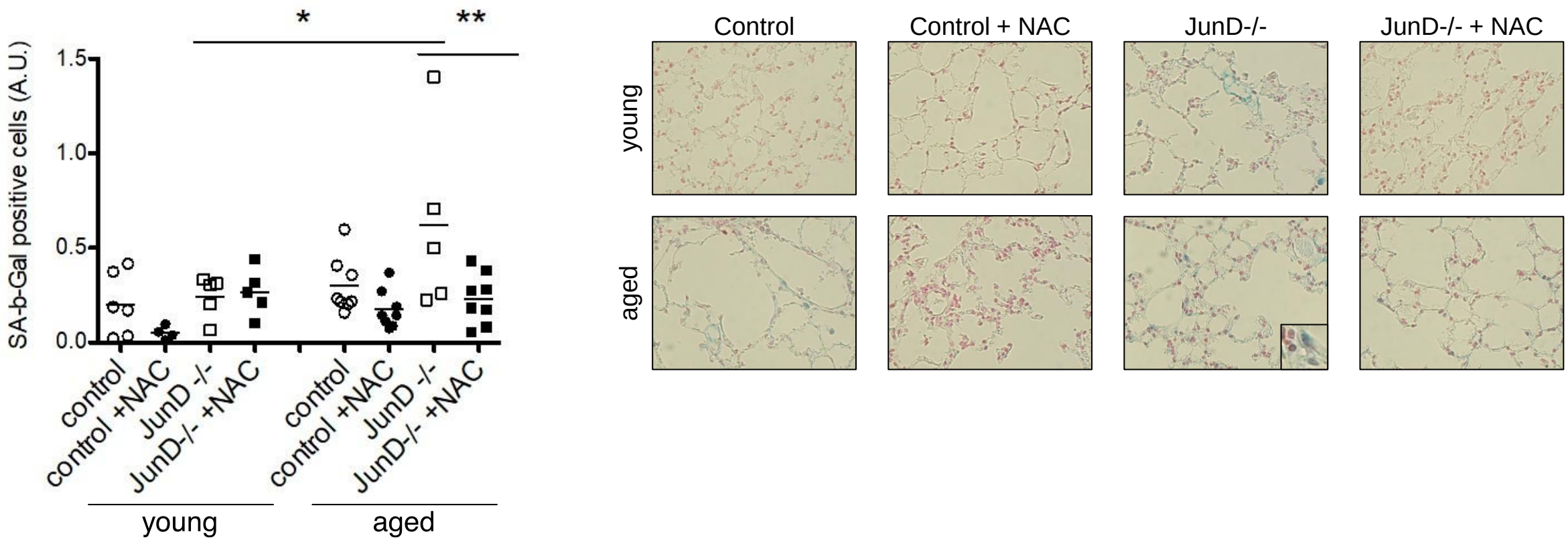

Figure S1: Effects of aging and *JunD* deficiency on the number of lung β-galactosidase positive cells in mice treated by NAC or vehicle.
(A) The number of β-galactosidase positive cells was higher in aged than in young *JunD*$^{-/-}$ mice. (B) Representative micrographs showing cells stained for β-galactosidase positive cells activity at pH 6. Results are individual values and means. ***P*<0.01, **P*<0.05.

Figure S2

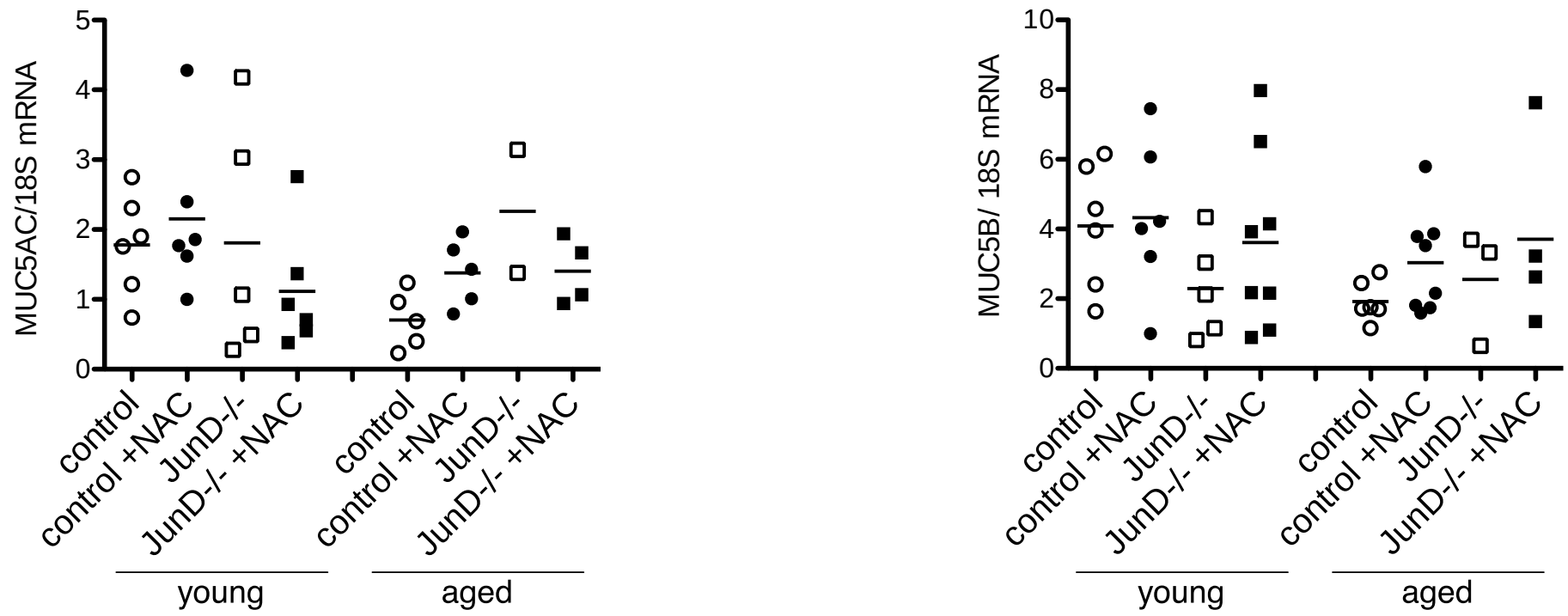

Figure S2: Muc5AC and Muc5B expression in lung tissue from *JunD*$^{-/-}$ and WT mice: effects of NAC treatment.
Lung Muc5AC (left panel) and Muc5B (right panel) mRNA levels did not differ between aged and young mice and were not affected by *JunD* inactivation.

Figure S3

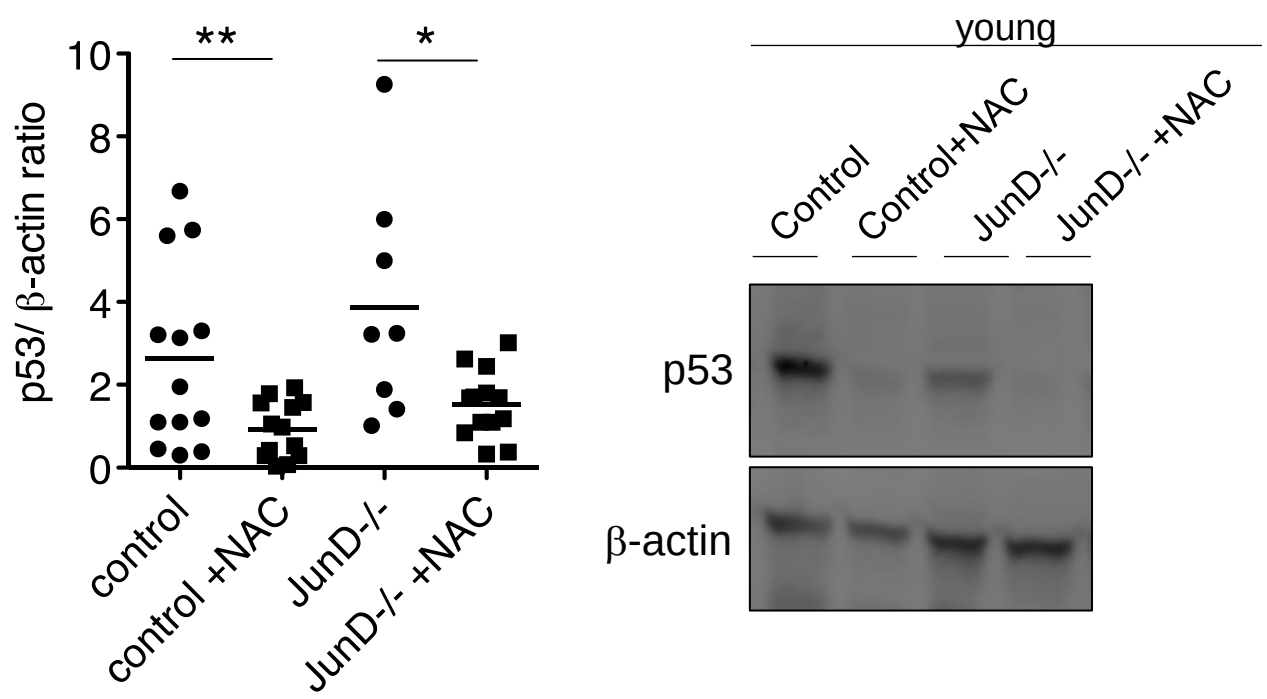

Figure S3: NAC treatment decreases p53 protein expression in control and *JunD*$^{-/-}$ mouse lungs
p53 expression assessed by Western blotting in mouse lung homogenates (left panel). Representative Western blots (right panel). Results are individual values and means. ***P*<0.01, and **P*<0.05.

Figure S4

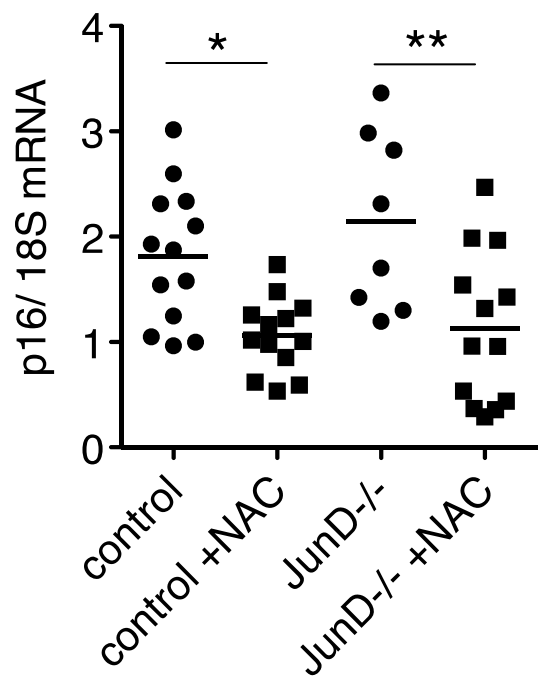

Figure S4: NAC treatment decreases p16 mRNA expression in control and *JunD*$^{-/-}$ mouse lungs
Lung p16 mRNA levels were assessed by quantitative PCR after reverse transcription. Results are individual values and means for 8 animals per group. ***P*<0.01, and **P*<0.05.

Figure S5

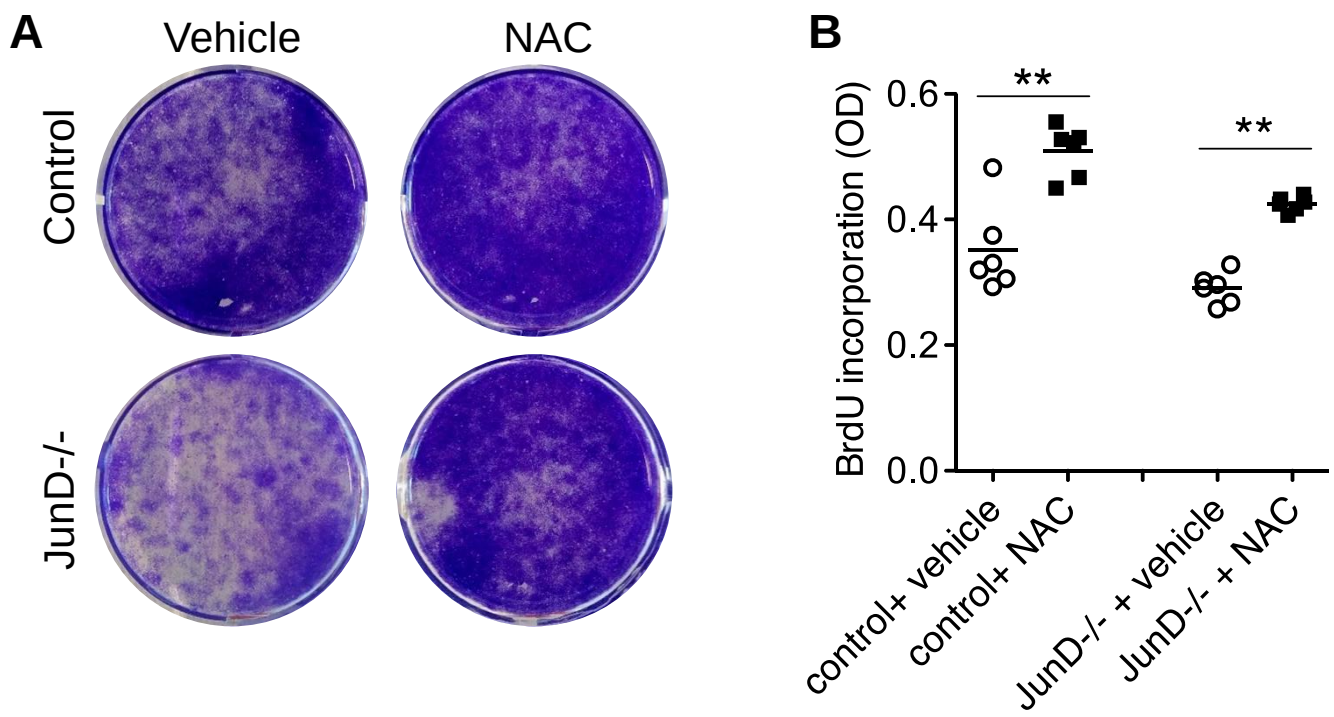

Figure S5: NAC treatment stimulates growth of mouse embryonic fibroblasts (MEFs) previously subjected to a 3T3 immortalization protocol.

Primary mouse embryonic fibroblasts from control and *JunD*$^{-/-}$ mice grown initially in a low-oxygen environment to increase their survival rate and previously subjected to a 3T3 immortalization protocol (*13*) were studied for assessment of cell proliferation in response to NAC (1mM) or vehicle. (A) Cells were fixed and stained using crystal violet. (B) NAC treatment slightly increased BrdU incorporation. Results are individual values and means for 8 animals per group. ***P*<0.01, and **P*<0.05.

Table S1

Table S1: Clinical features and pathological variables in all the patients with chronic obstructive pulmonary disease and control smokers from whom lung samples were obtained.

	Control		COPD	
	Mean	*sem*	Mean	*sem*
n	8		8	
Females/males	4/4		4/4	
Age, yr	63.2	±*5.41*	61.1	±*2.40*
FEV %	98.9	±*7.34*	72.4*	±*6.34*
FVC%	100.2	±*4.44*	87.2	±*6.42*
FEV/FVC,%	91.6	±*4.55*	63**	±*1.88*
Pack-years	12.5	±*6.41*	34.4*	±*3.46*
BMI	24.4	±*0.98*	24.1	±*1.44*

Abbreviations: FEV, forced expiratory volume; FVC, forced vital capacity; BMI, body mass index.

Fig1: JunD

Fig1: actin

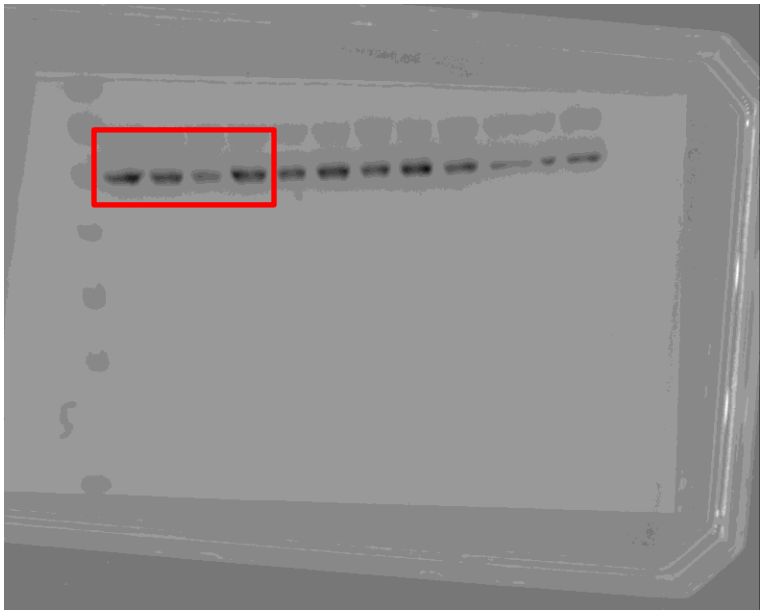

Fig2: JunD

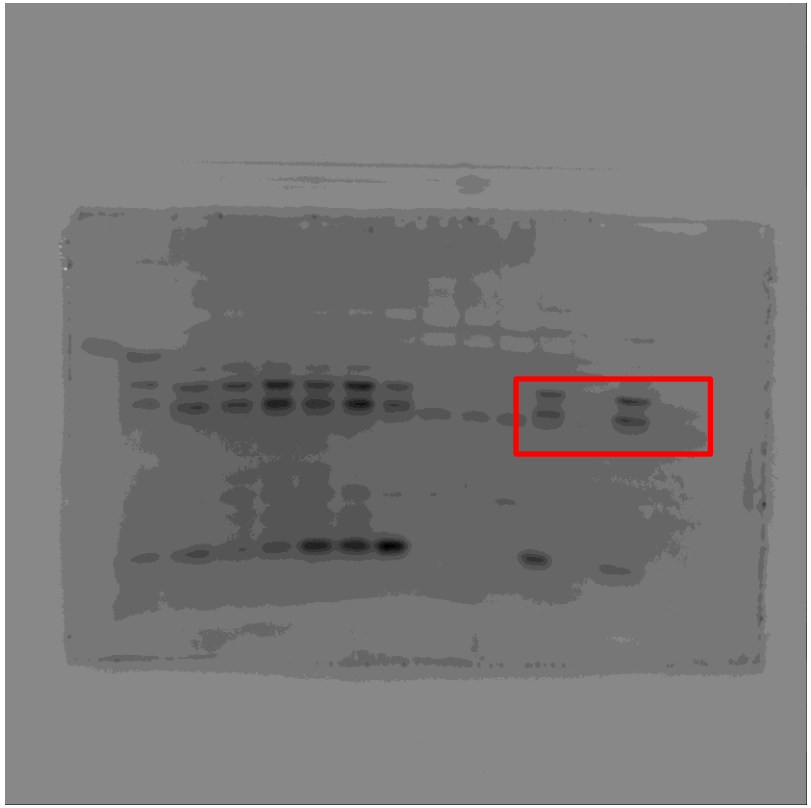

Fig2: actin

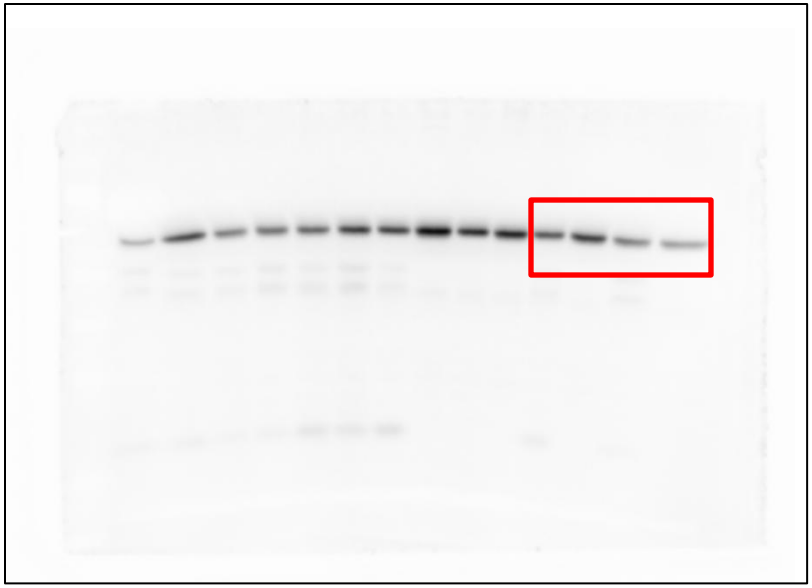

Fig2: Nrf2

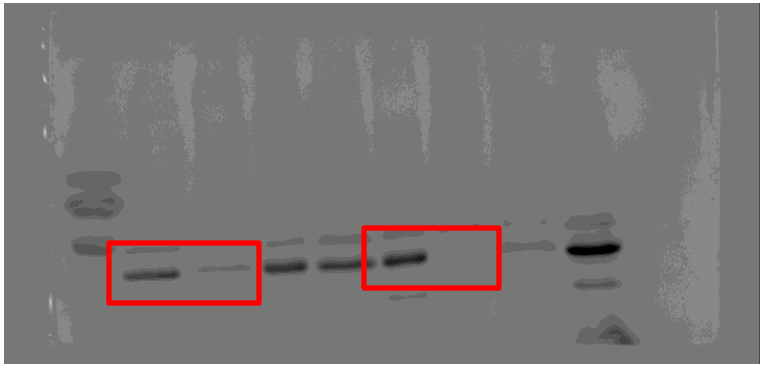

Fig2: actin

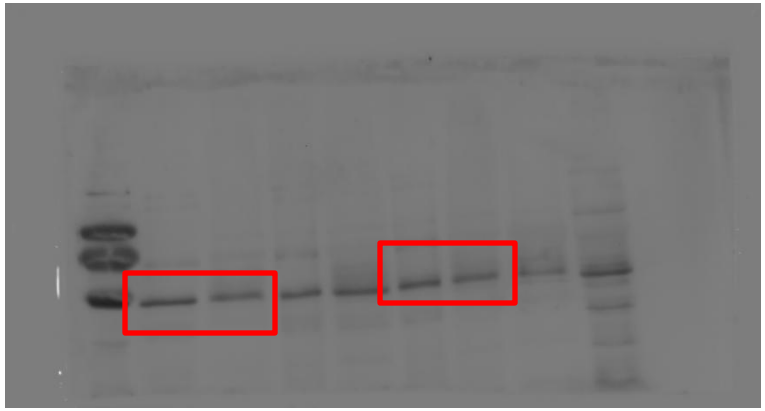

Fig3: gH2.AX young

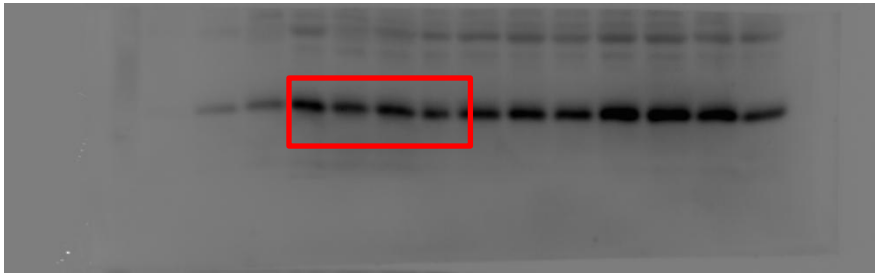

Fig3: actin young

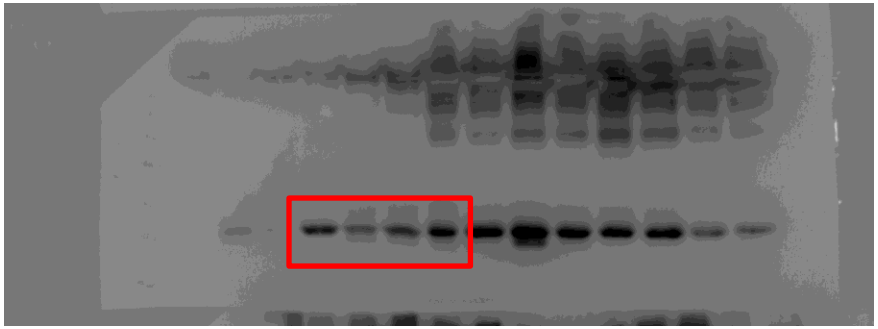

Fig3: gH2.AX aged

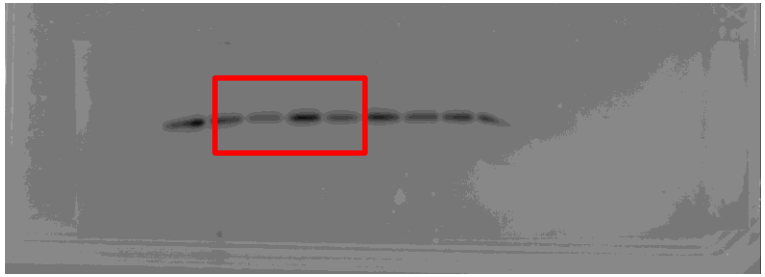

Fig3: actin aged

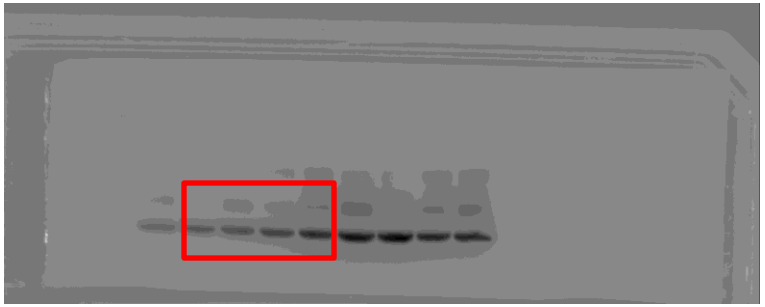

Fig S3: p53

Fig S3: actin