

Supplementary Information File

**Metformin-induced ROS upregulation as amplified by apigenin
causes profound anticancer activity while sparing normal cells**

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Suh, Soon Sung Lim & Jae-Yong Lee

Fig.1 A ROS analysis (AsPC-1)

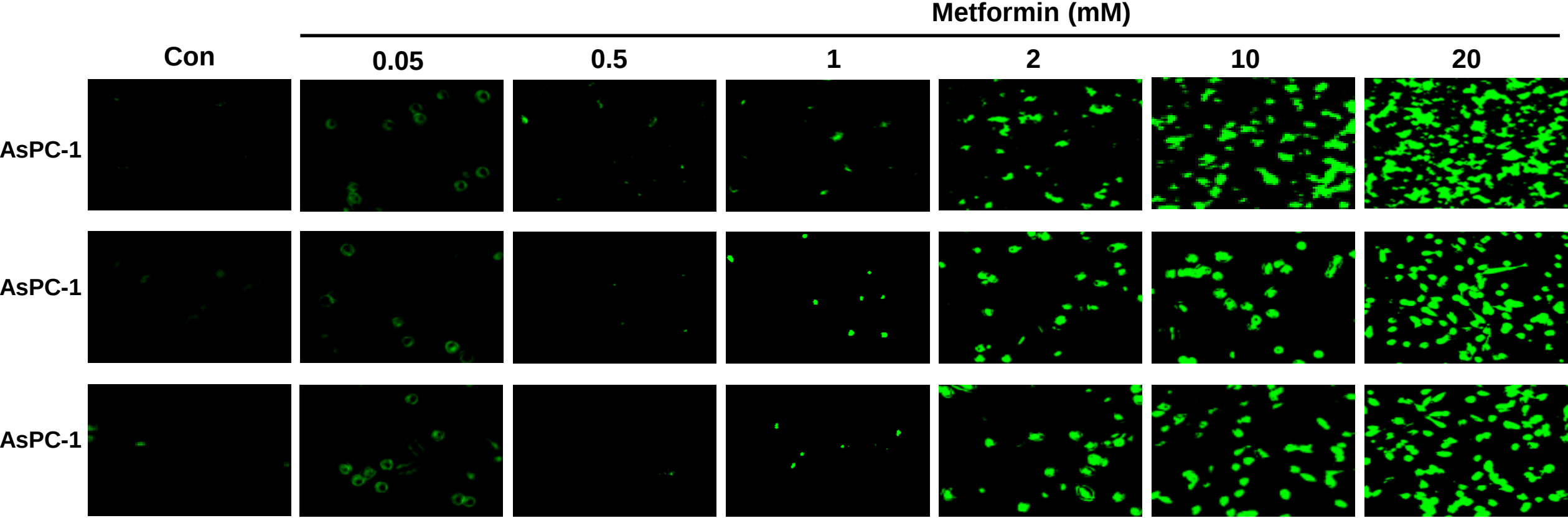


Fig.1 A ROS analysis (HDF)

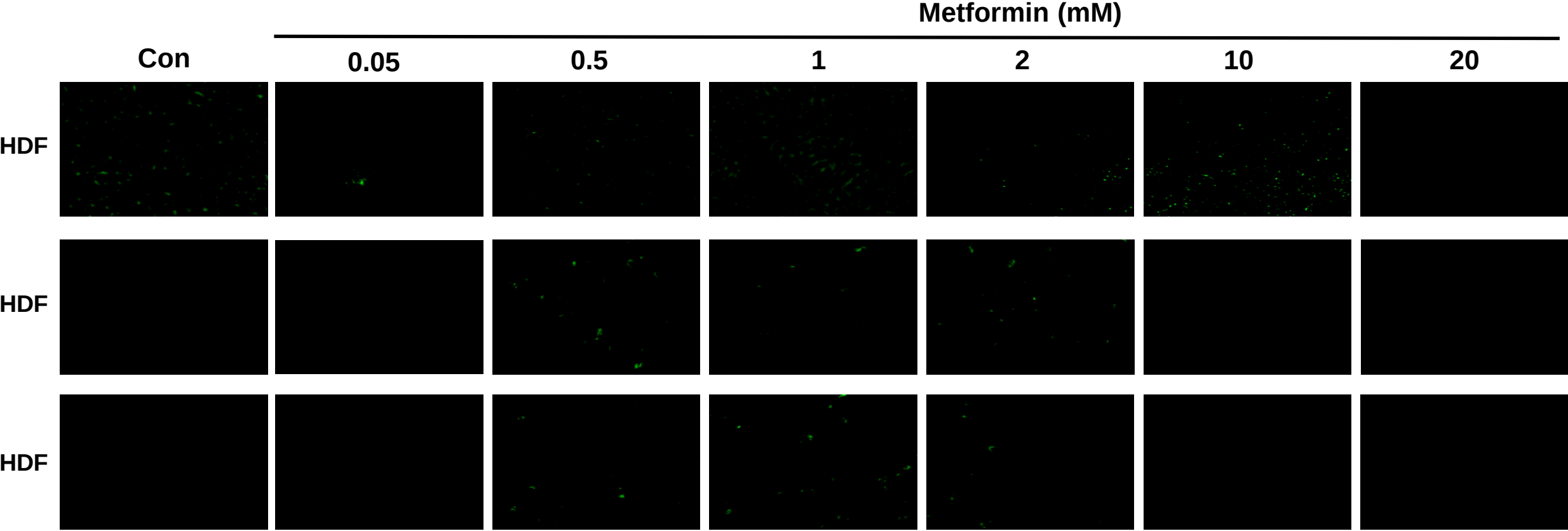


Fig.1 B&C ROS intensity and ATP (HDF & AsPC-1)

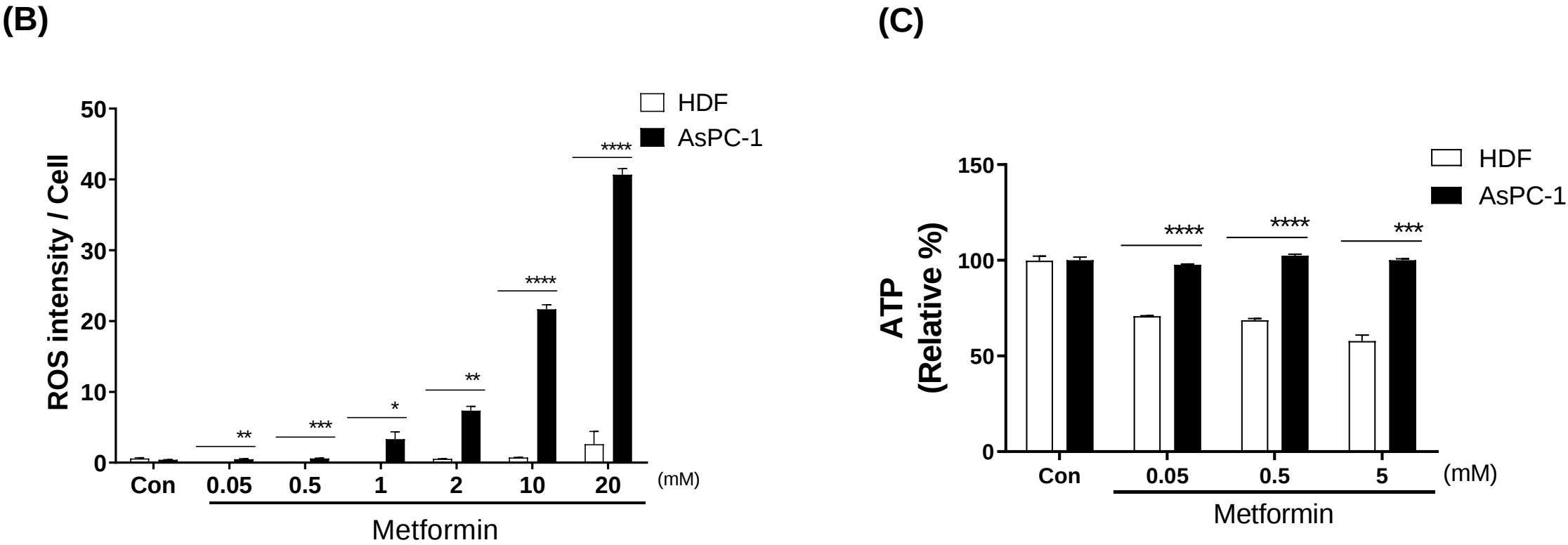


Figure 1. C) Cellular ATP production AsPC-1 and HDF cells

AsPC-1 ATP							
Control	0.5mM Me	5mM Me	20µM Apigenin				
0.41	0.43	0.42	0.24				
0.43	0.43	0.42	0.25				
0.43	0.44	0.43	0.23				
HDF							
con	0.5mM Me	5mM Me	20uM Apigenin				
0.253	0.165	0.141	0.115				
0.247	0.168	0.155	0.128				
0.234	0.172	0.129	0.142				

Fig. 2A. Nuclear Transport: Immunofluorescence HDF-1

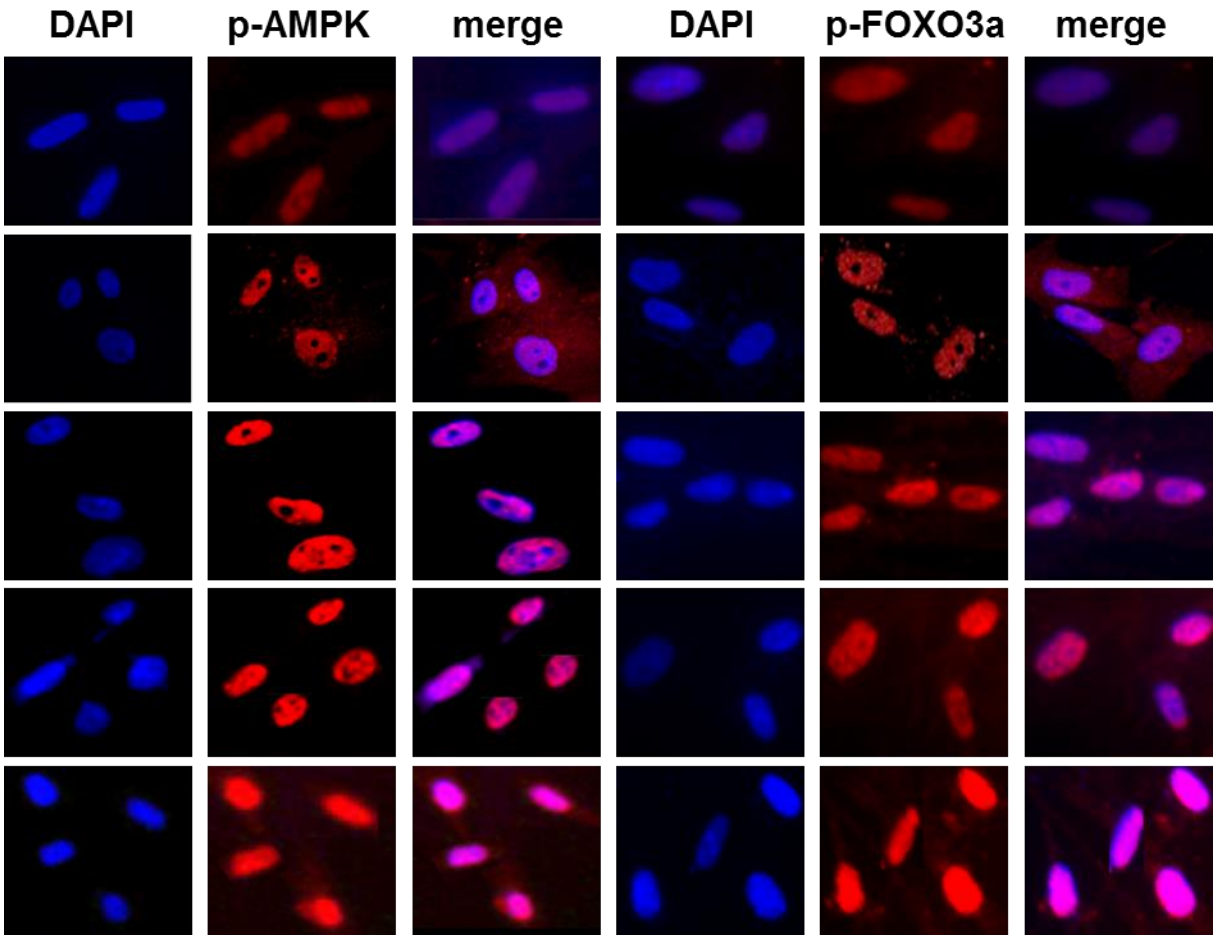


Fig. 2A. Nuclear Transport: Immunofluorescence HDF-2

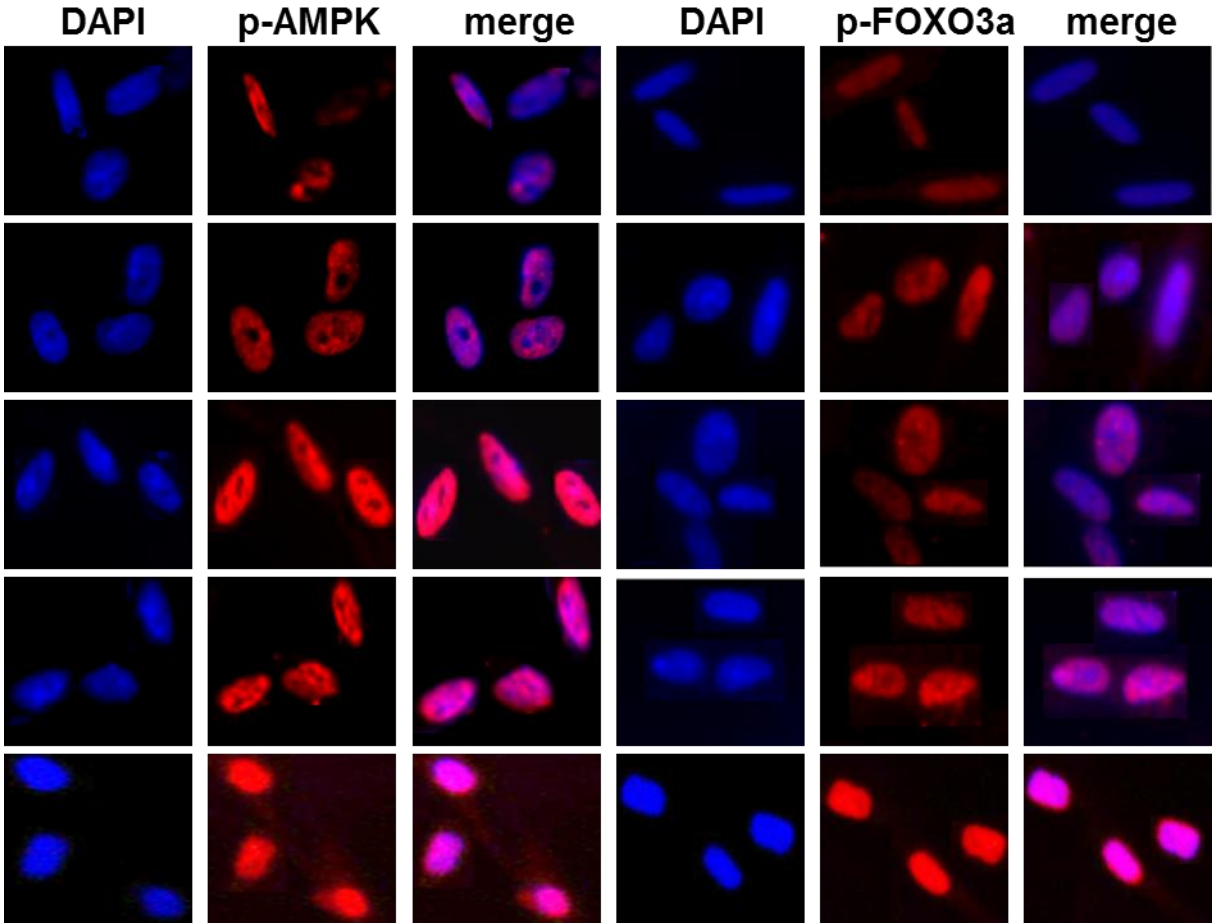


Fig. 2A. Nuclear Transport: Immunofluorescence HDF-3

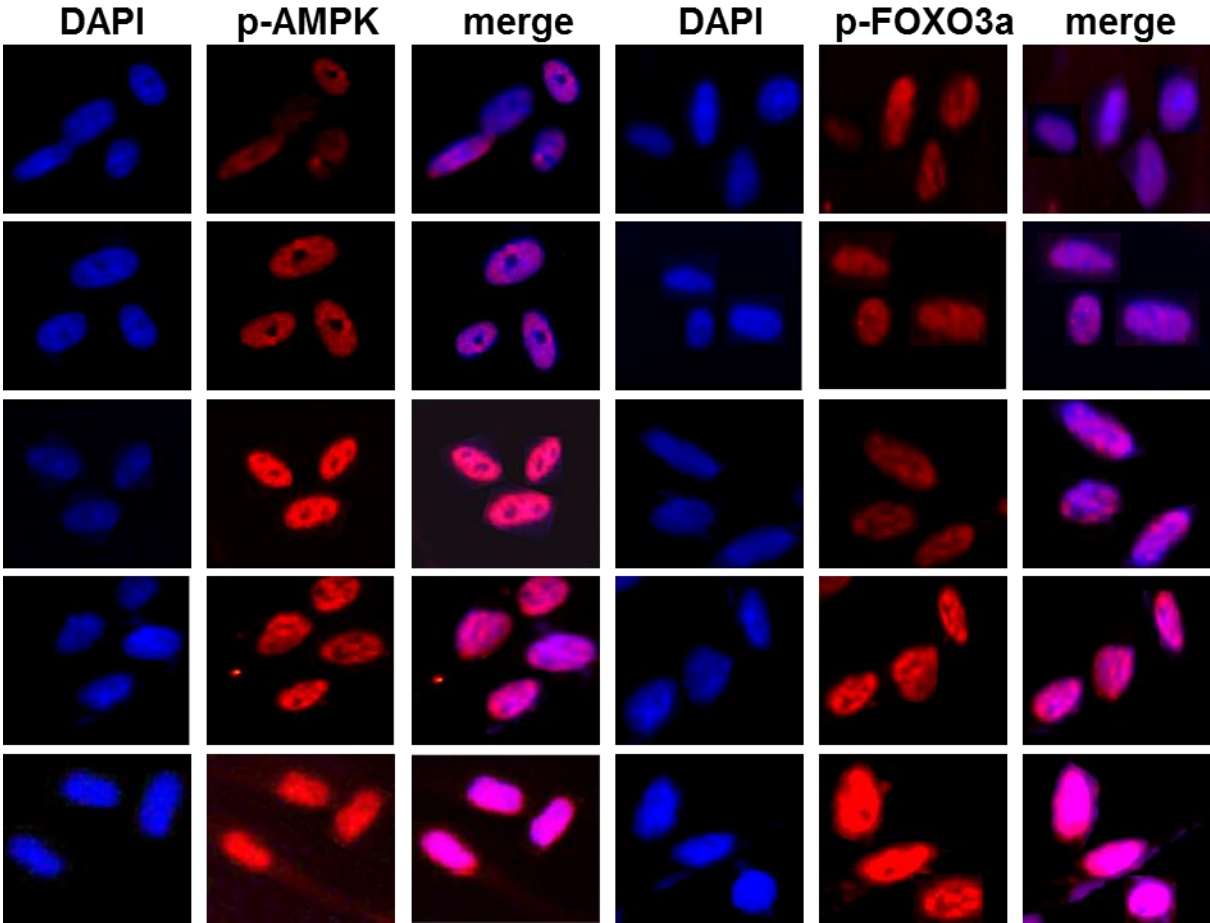


Fig. 2A. Nuclear Transport: Immunofluorescence ASPC-1 -1

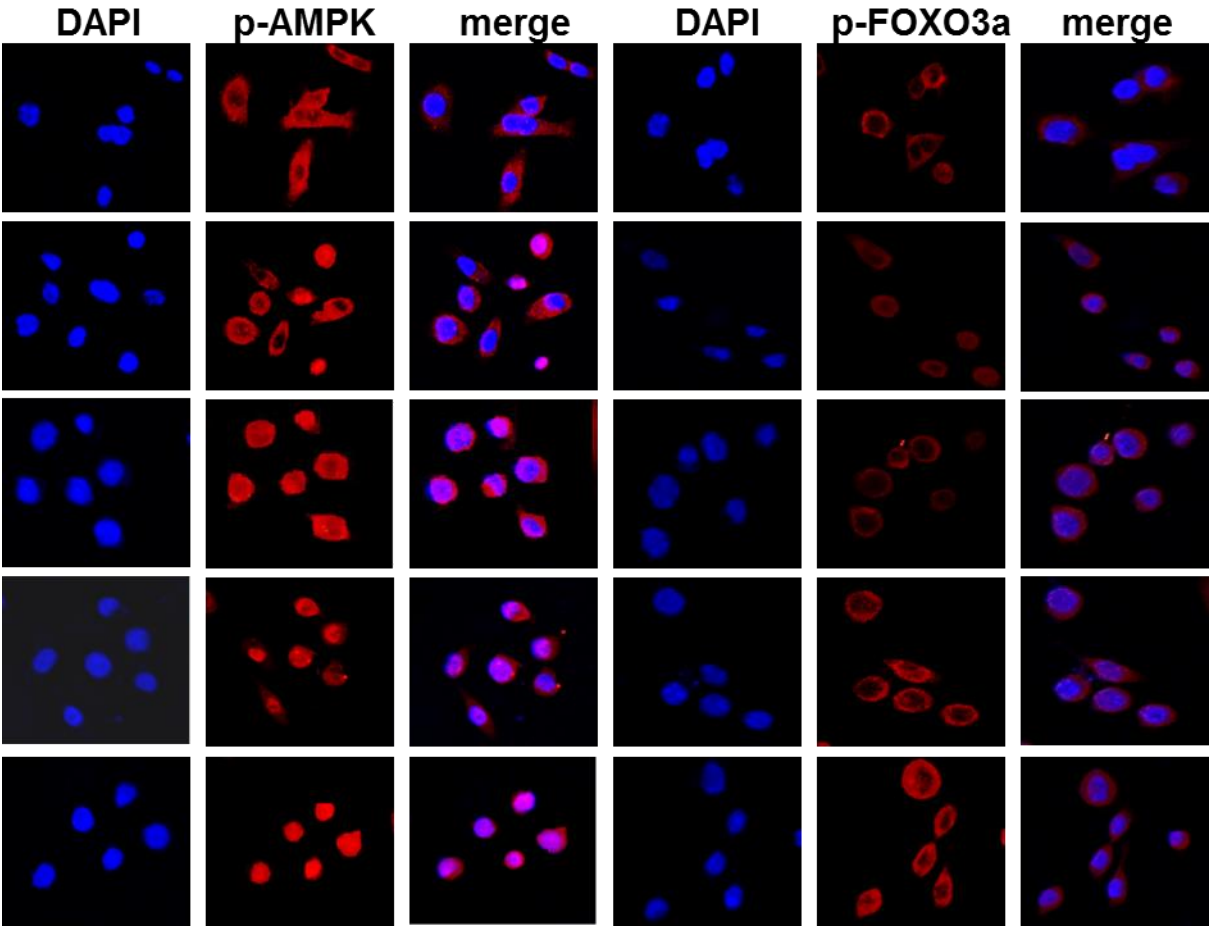


Fig. 2A. Nuclear Transport: Immunofluorescence ASPC-1 -2

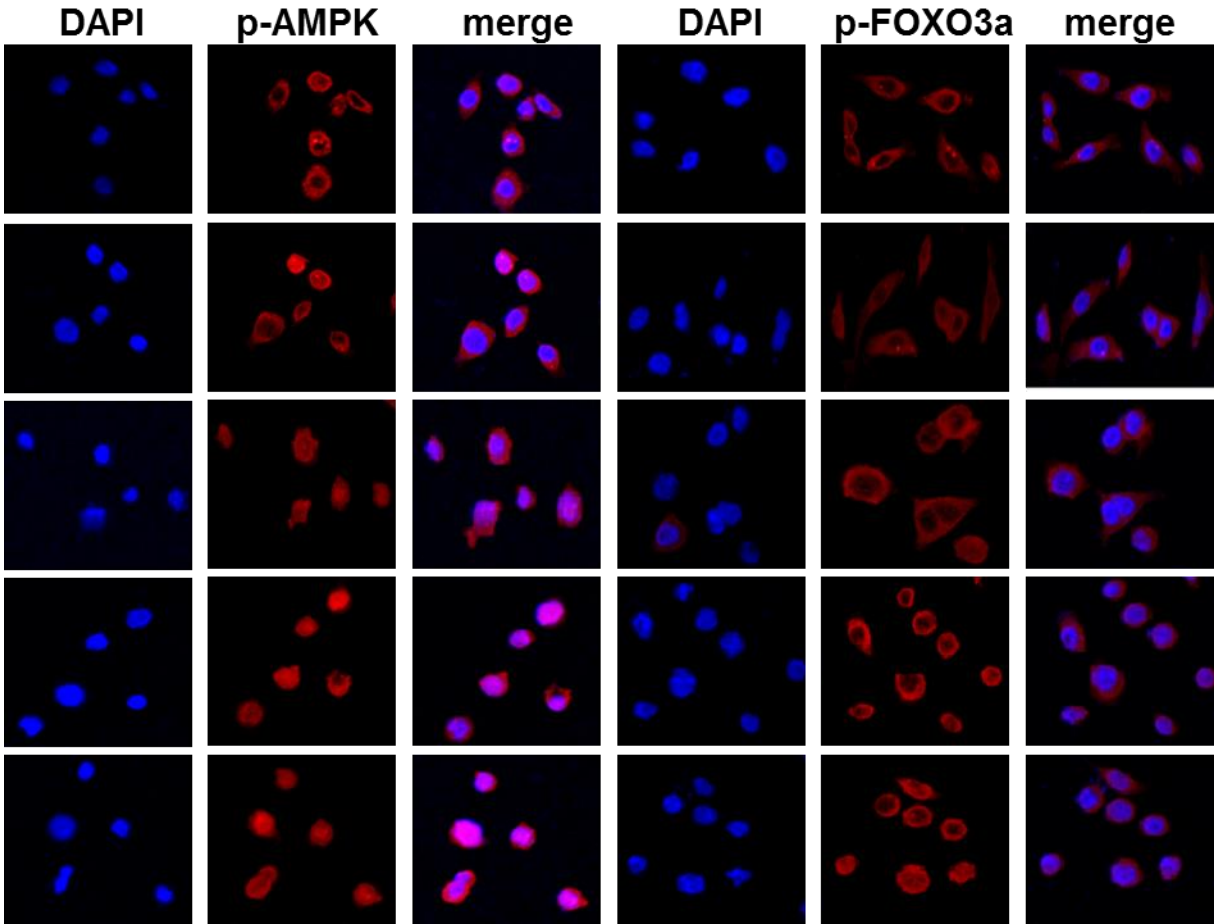


Fig. 2A. Nuclear Transport: Immunofluorescence ASPC-1 -3

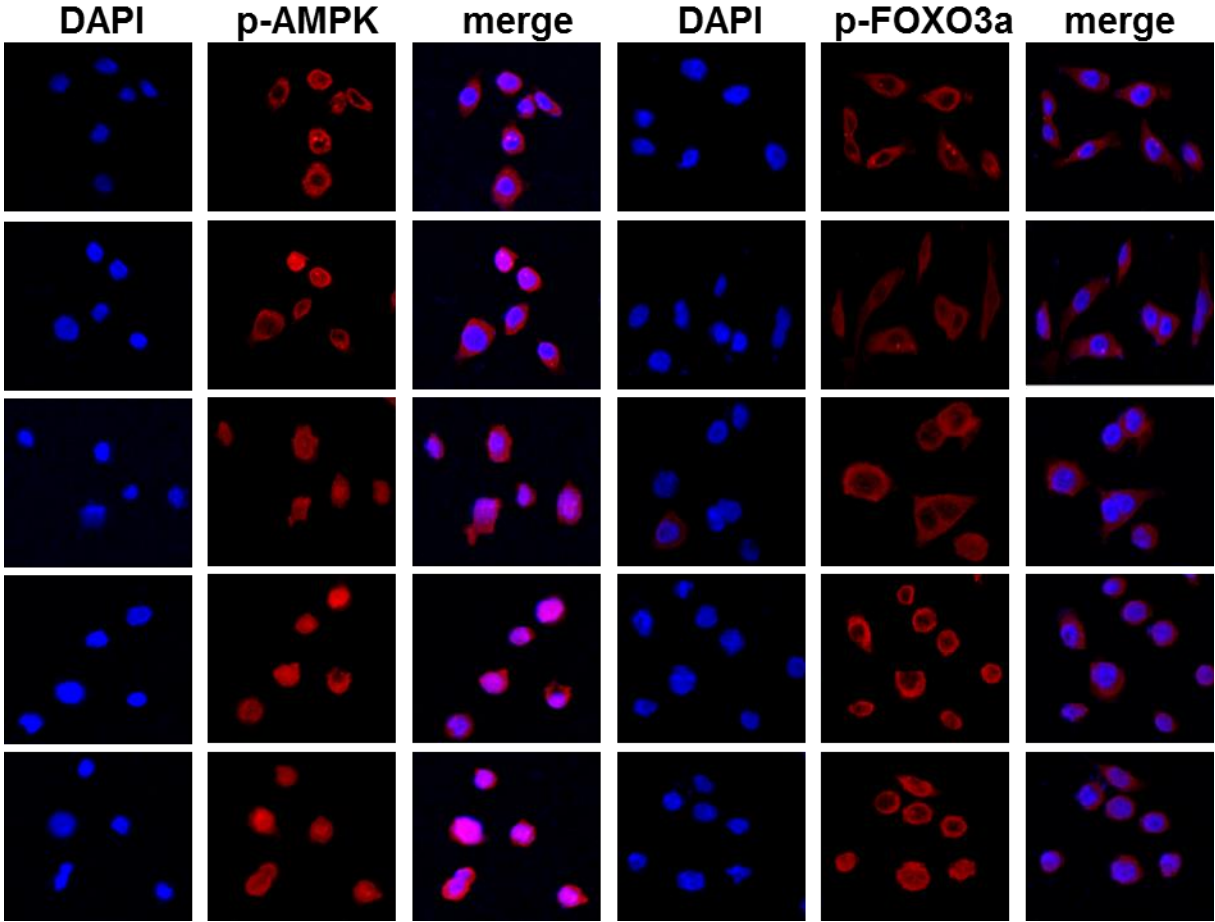


Fig. 2A. Nuclear Transport: Immunofluorescence HDF-1

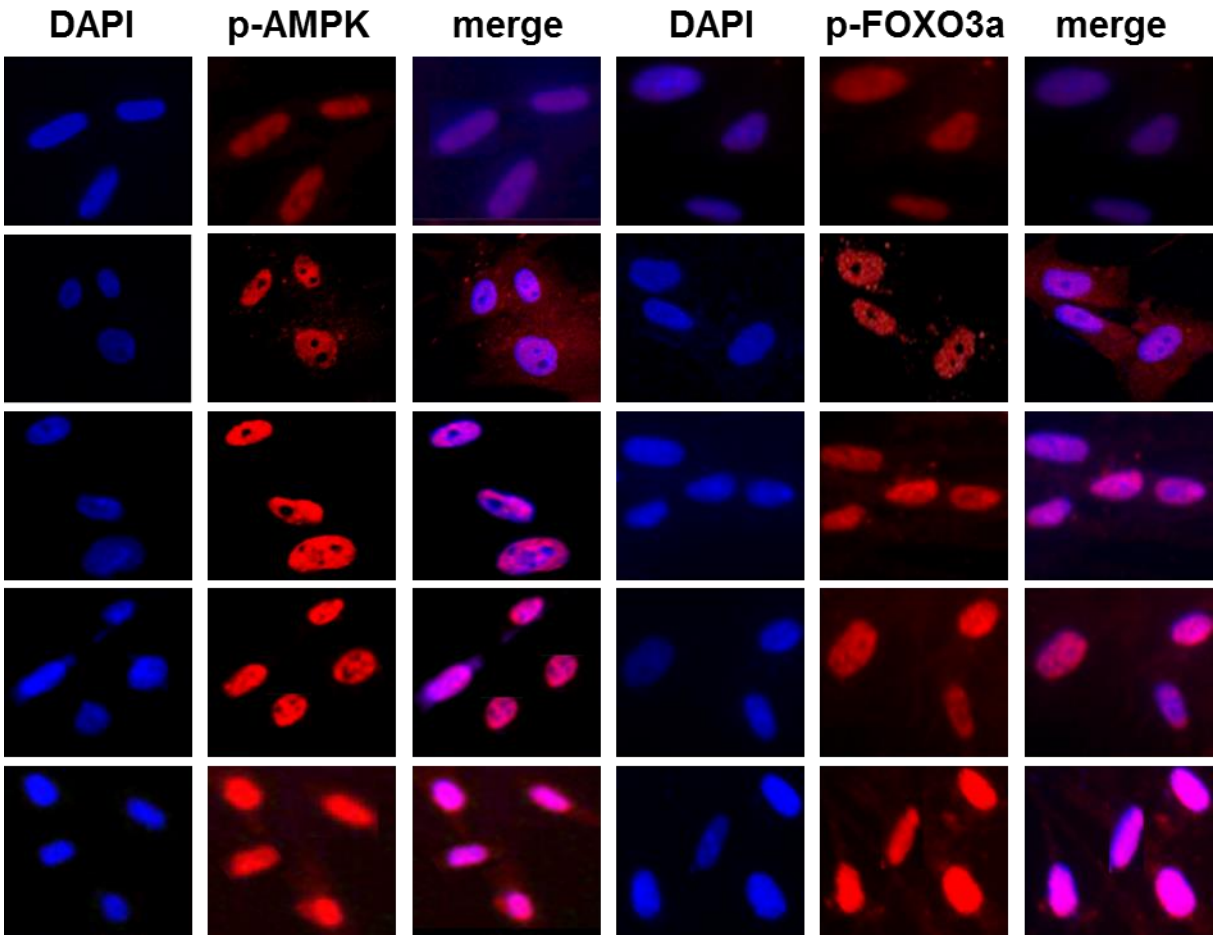


Fig. 2B western blot analysis (HDF)

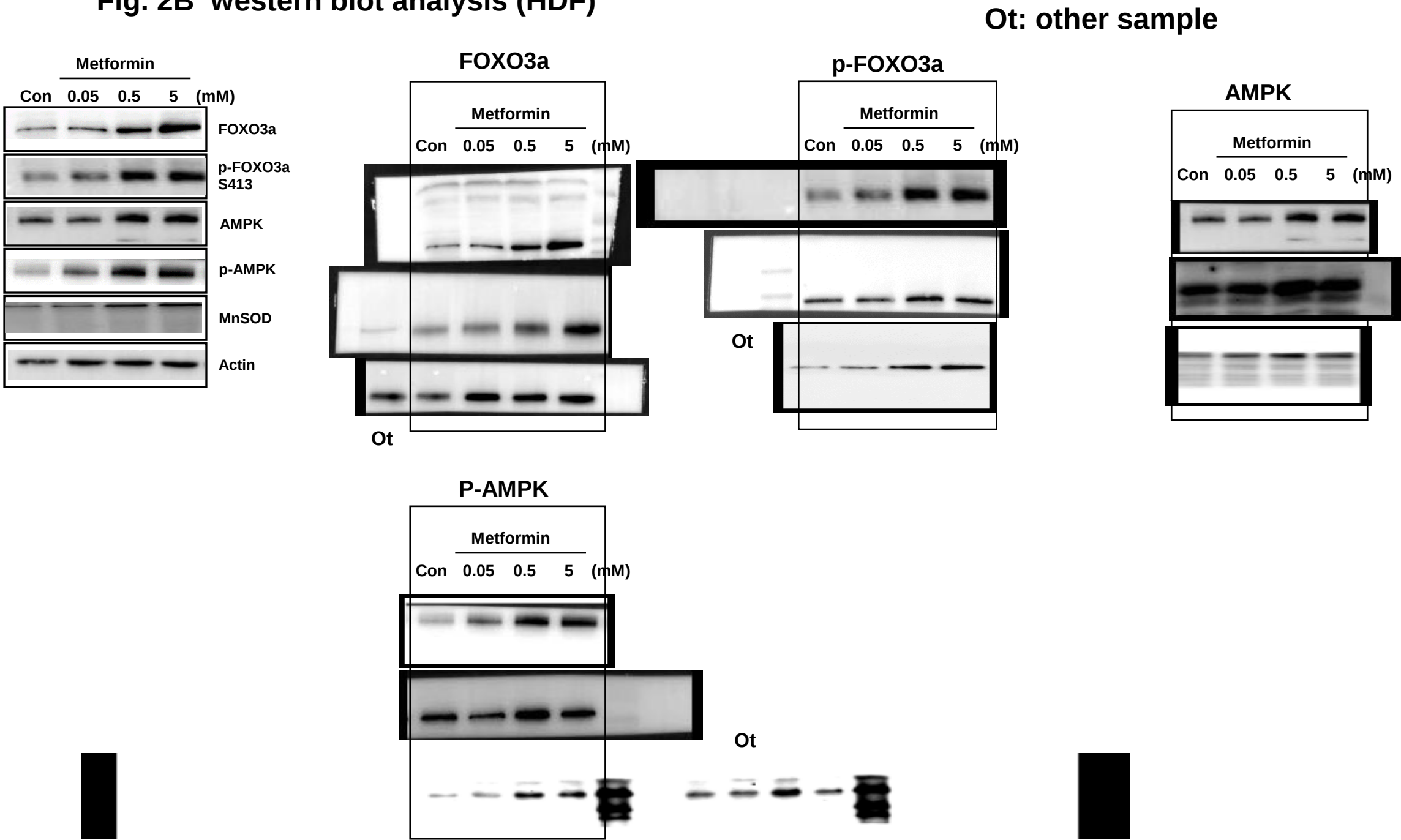


Fig. 2B western blot analysis (HDF)

Ot: other sample

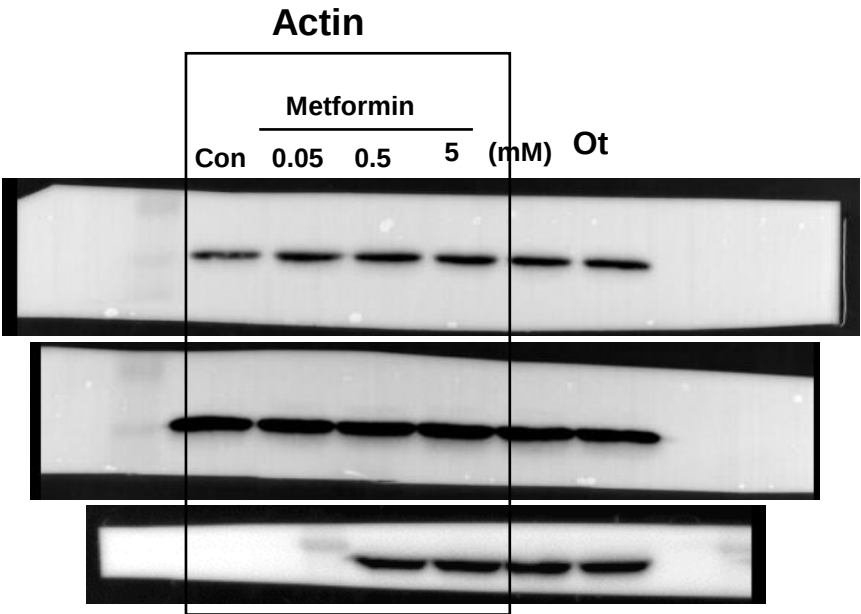
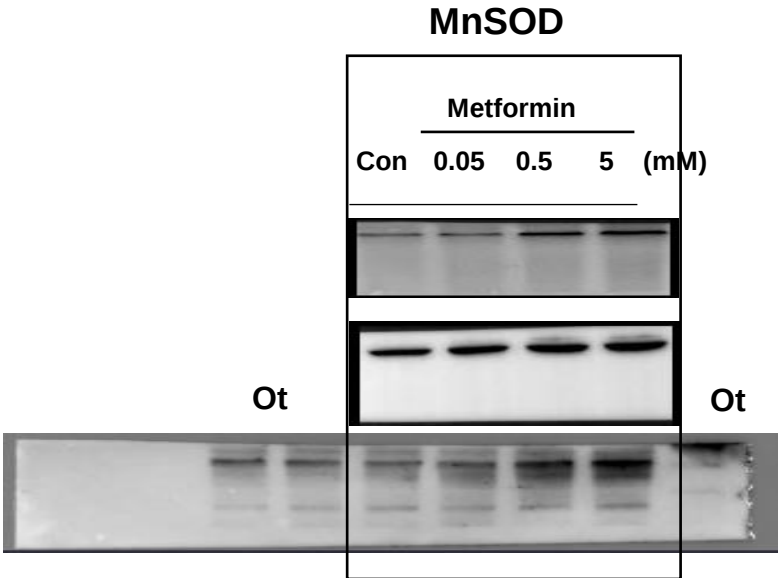
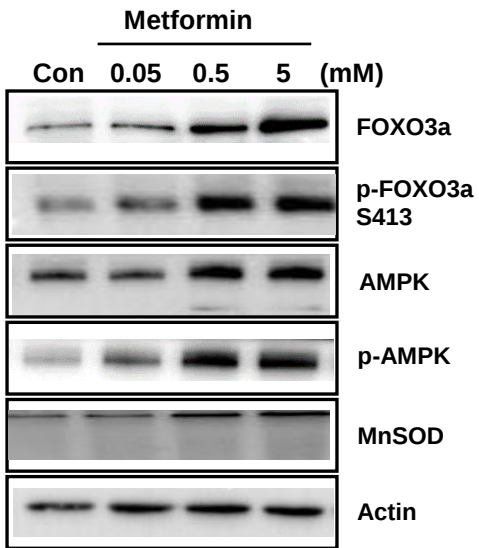


Fig. 2B western blot analysis (AsPC-1)

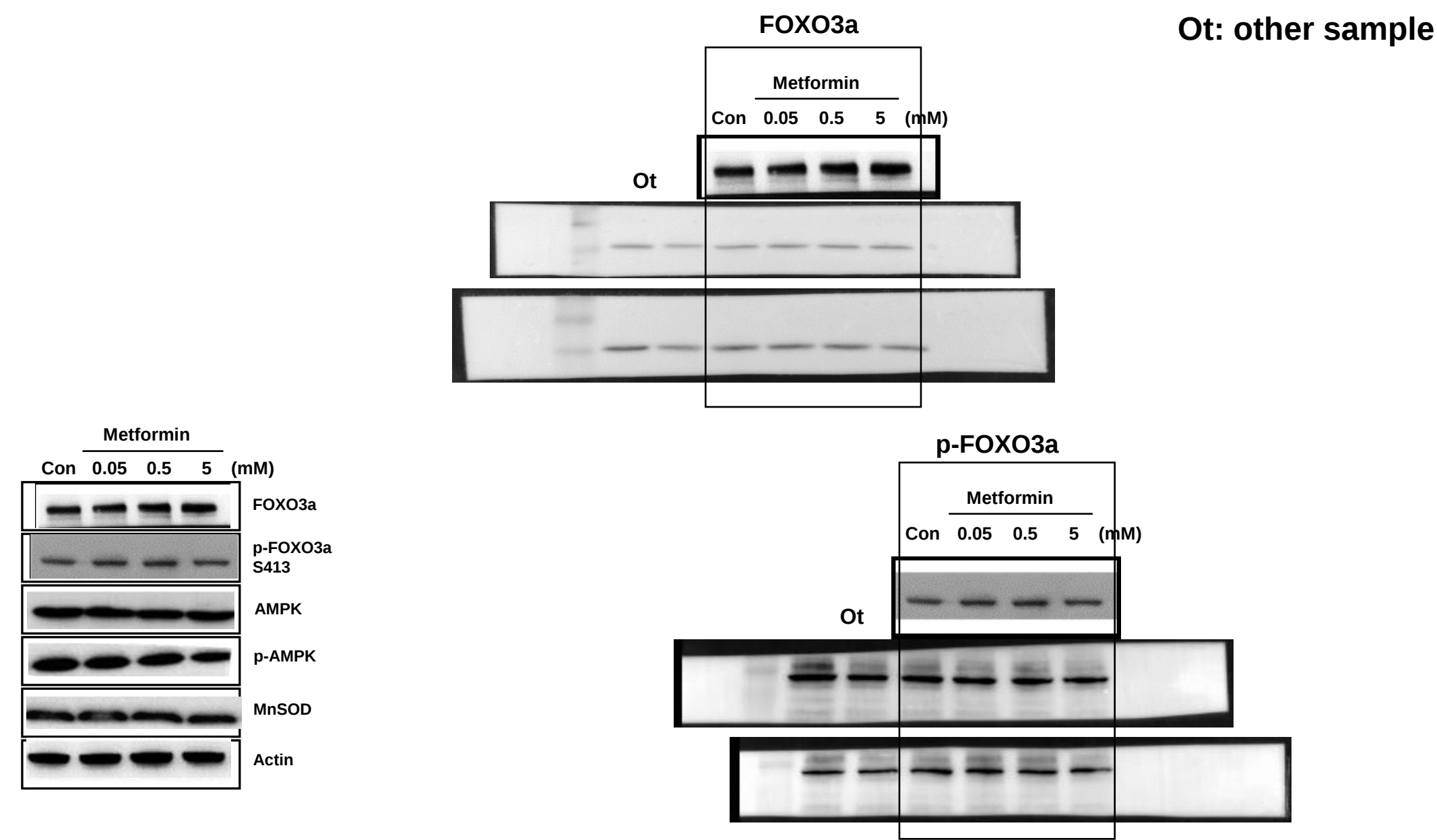


Fig. 2B western blot analysis (AsPC-1)

Ot: other sample

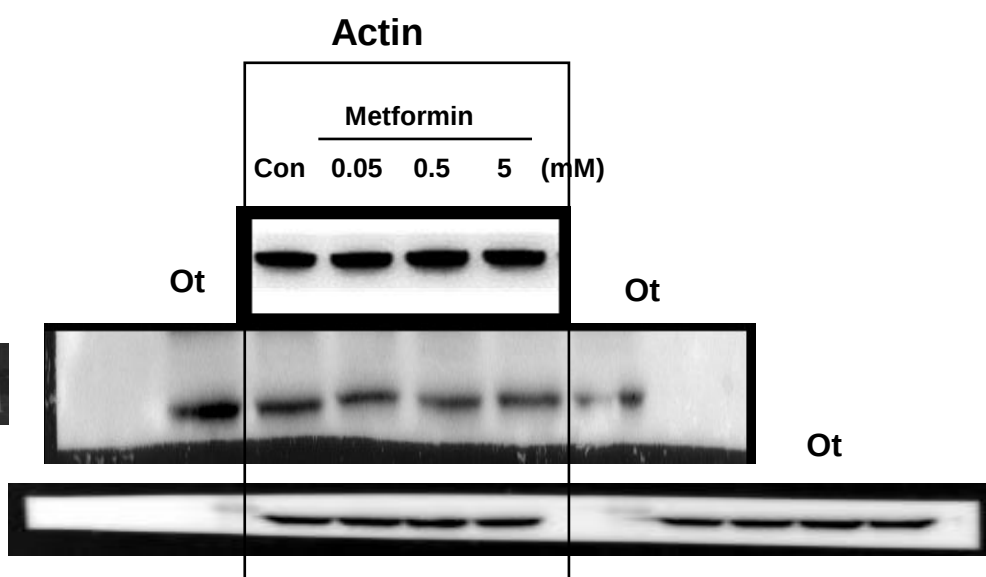
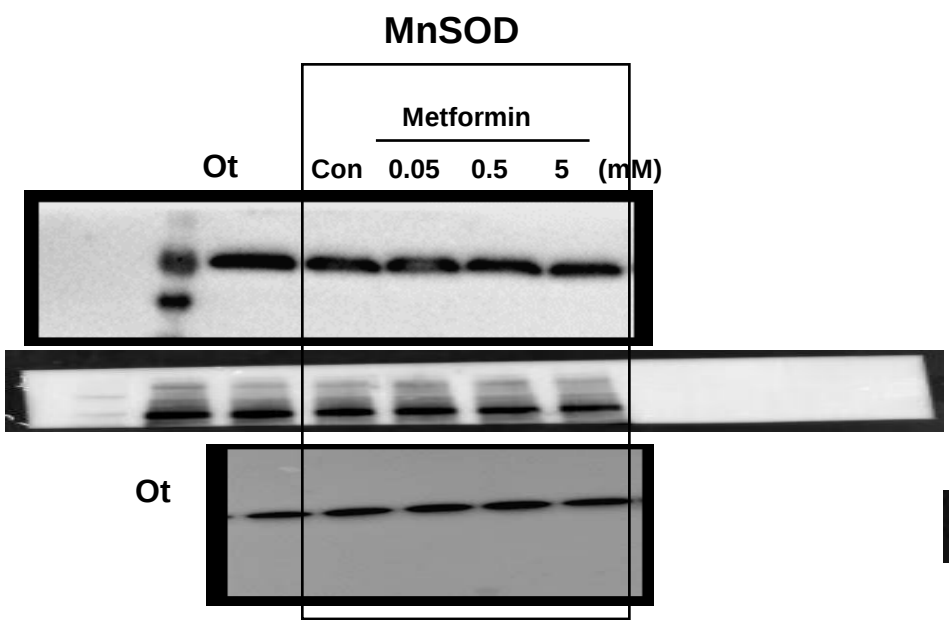
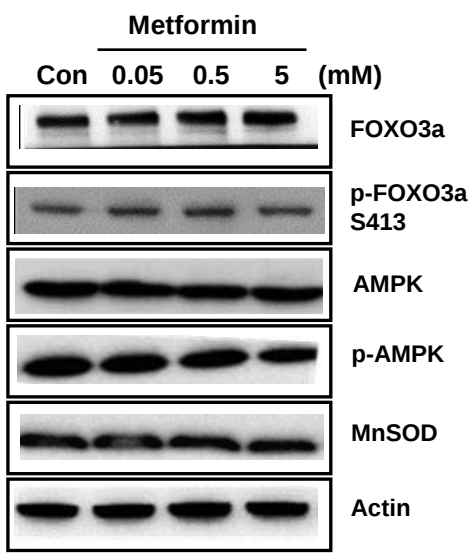
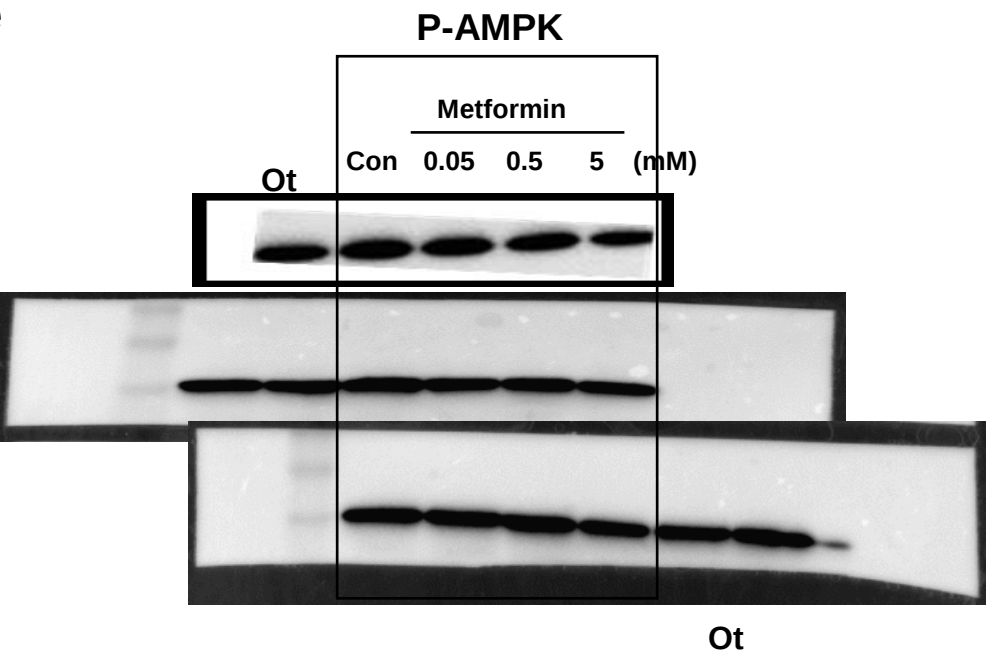
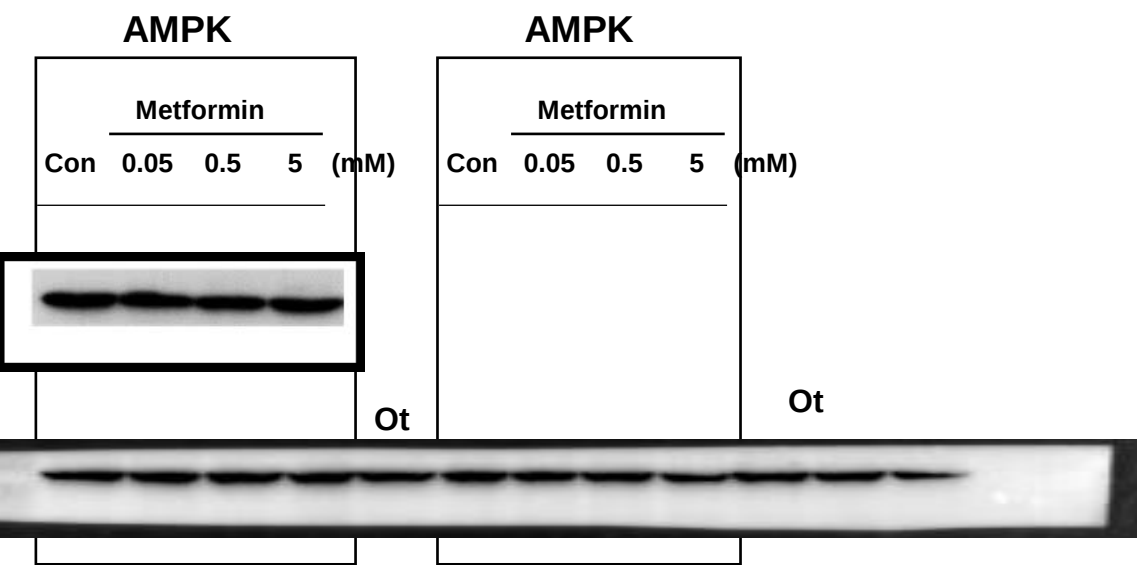


Fig. 3A. si-FOXO3a and wt-FOXO3a transfection by ROS analysis

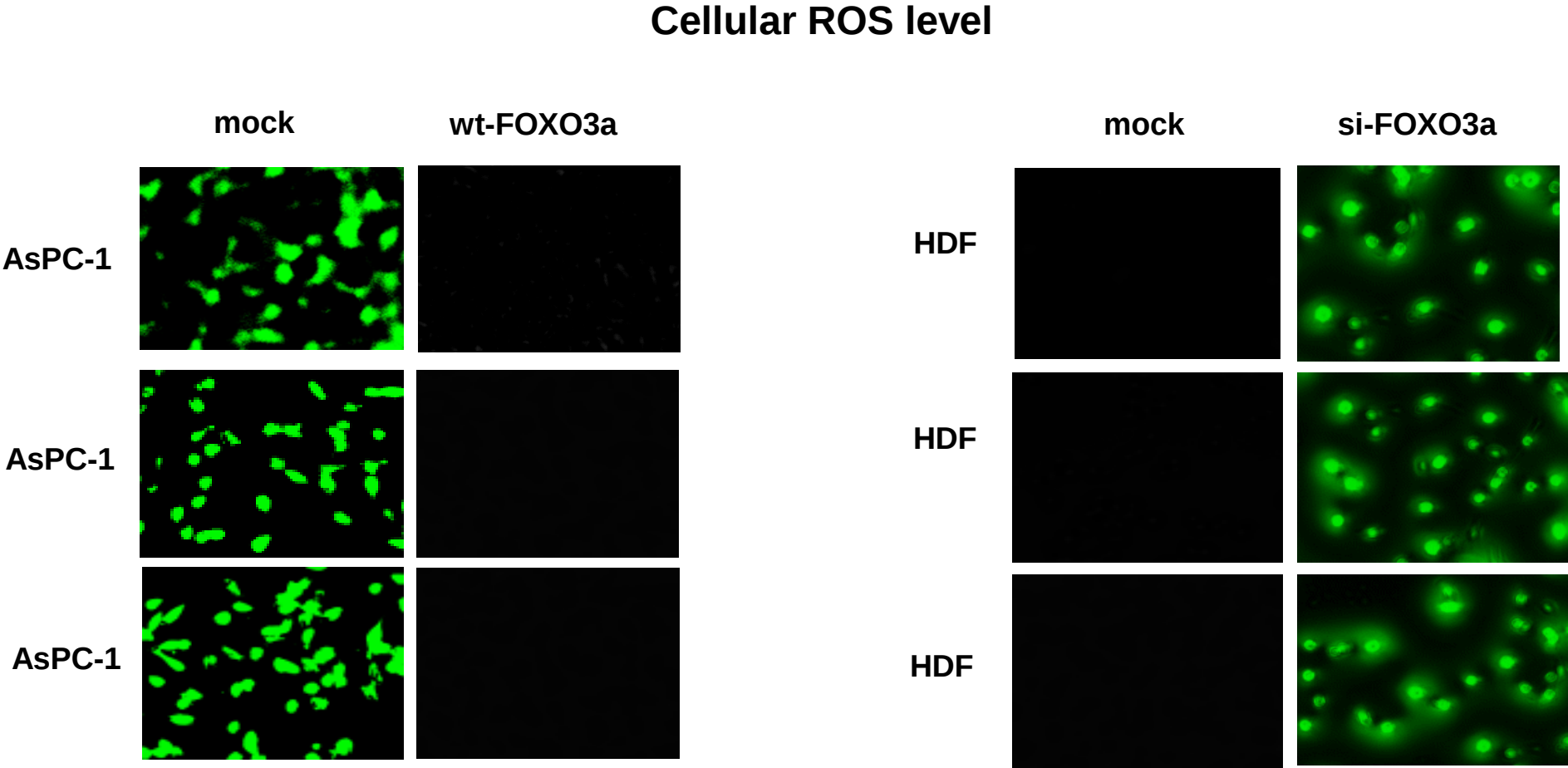


Fig. 3B western blot analysis (AsPC-1 and HDF)

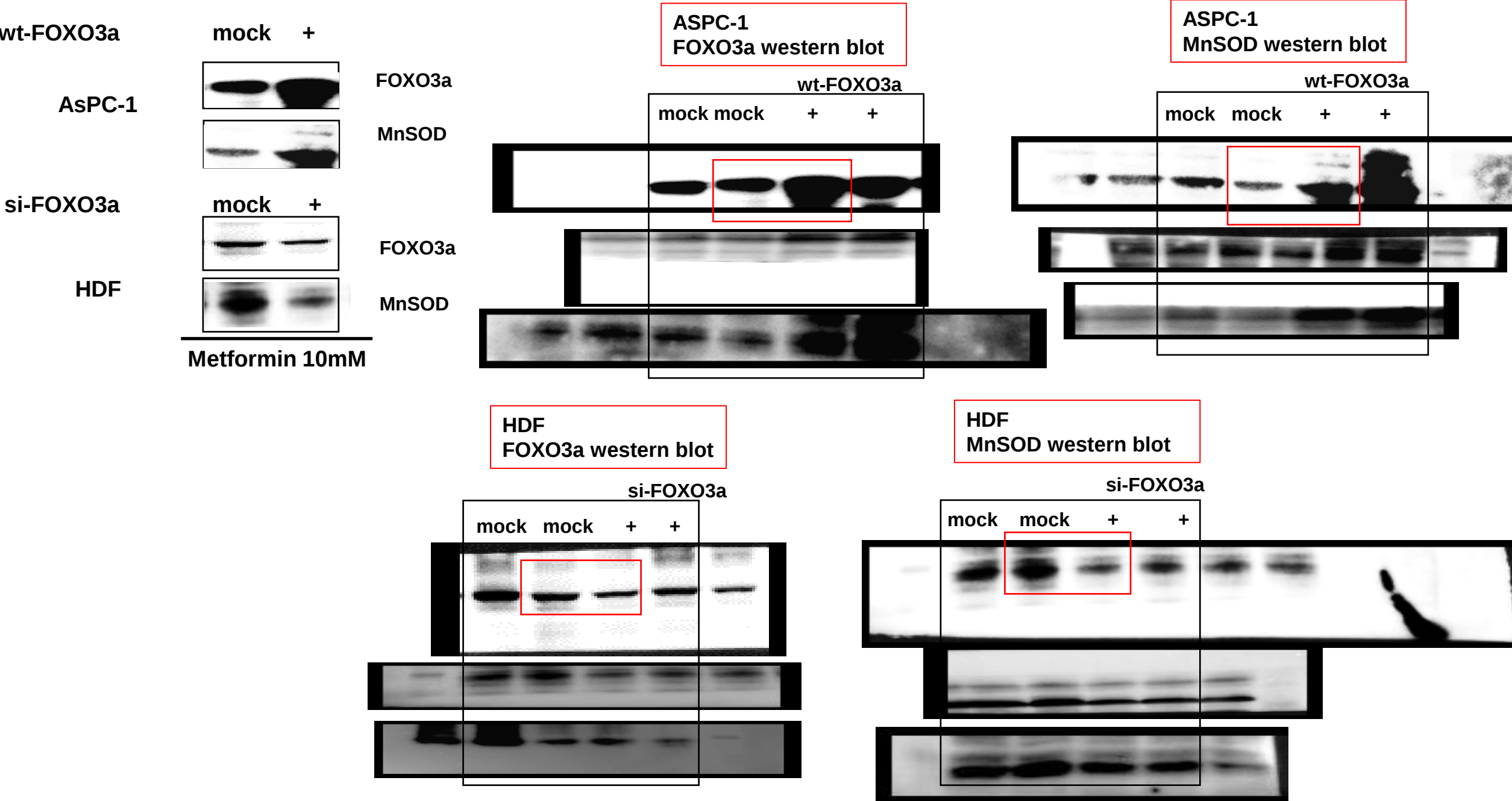


Fig.4B Cell cycle analysis (HDF)

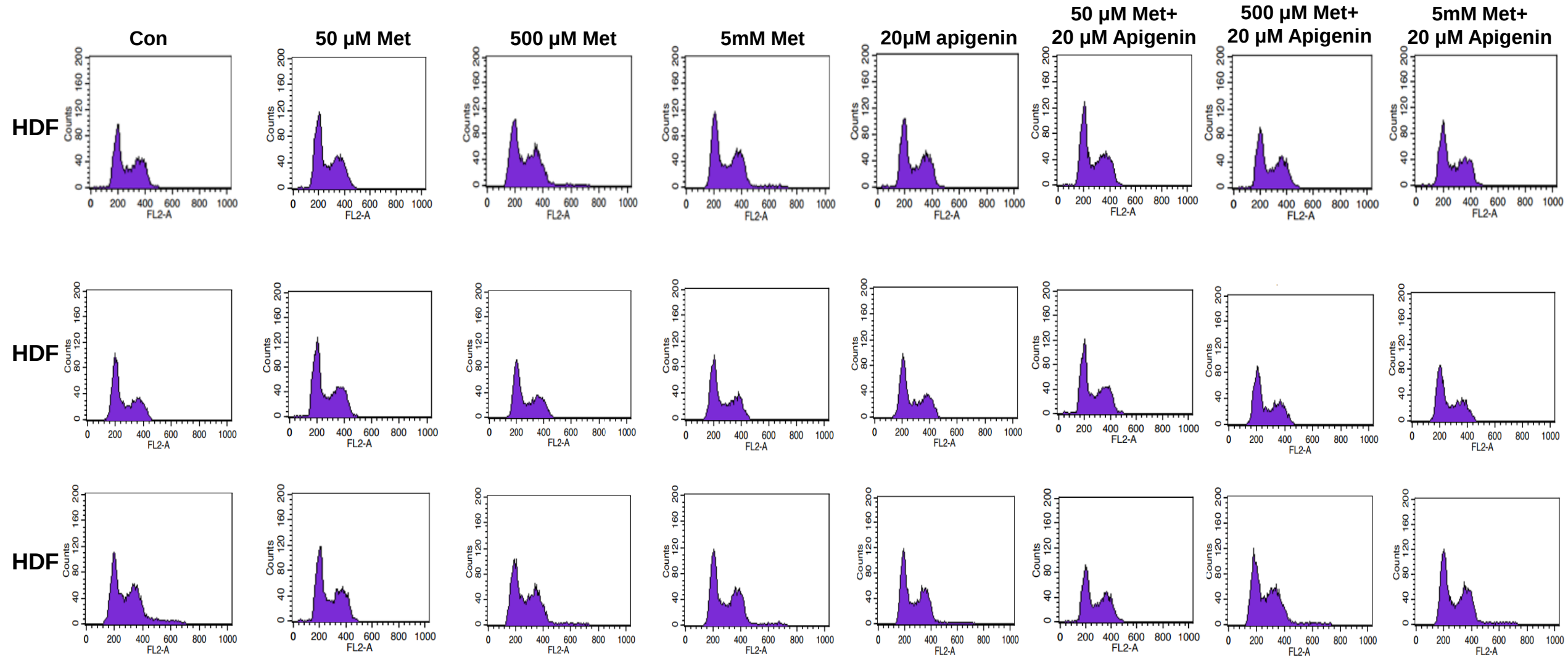


Fig.4 B Cell cycle analysis (AsPC-1)

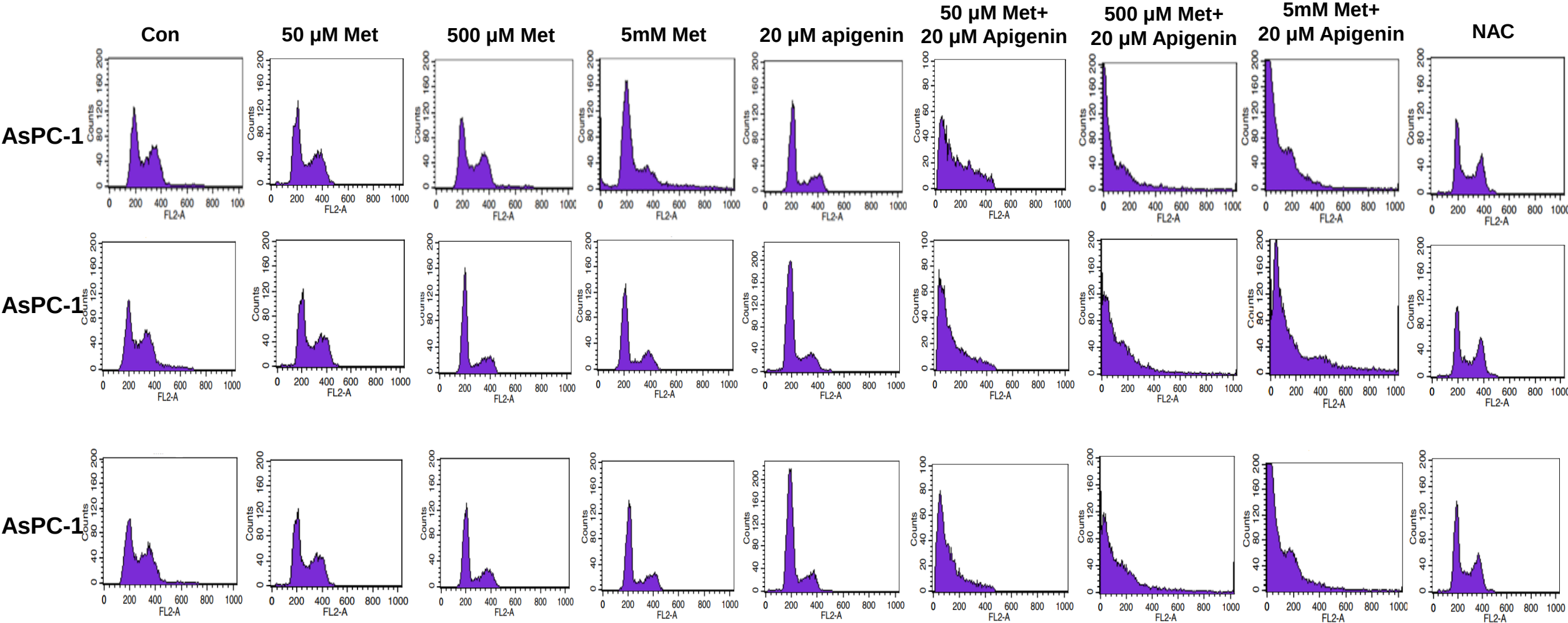


Fig.4 C ROS analysis (HDF)

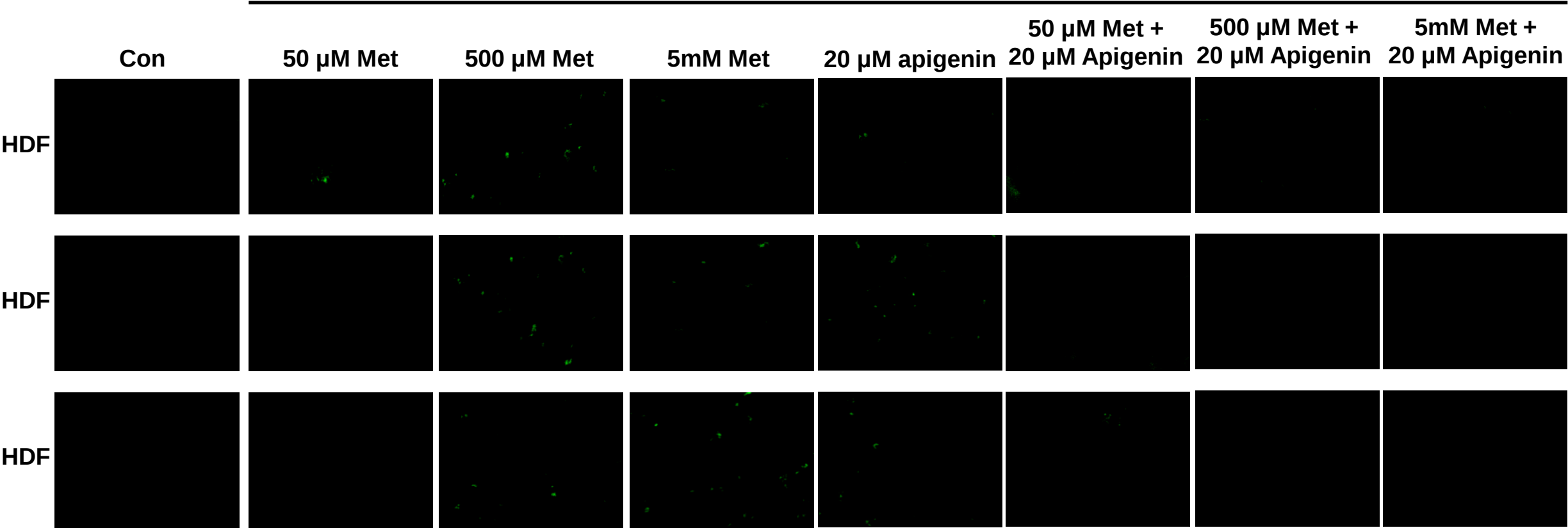


Fig.4 C ROS analysis (AsPC-1)

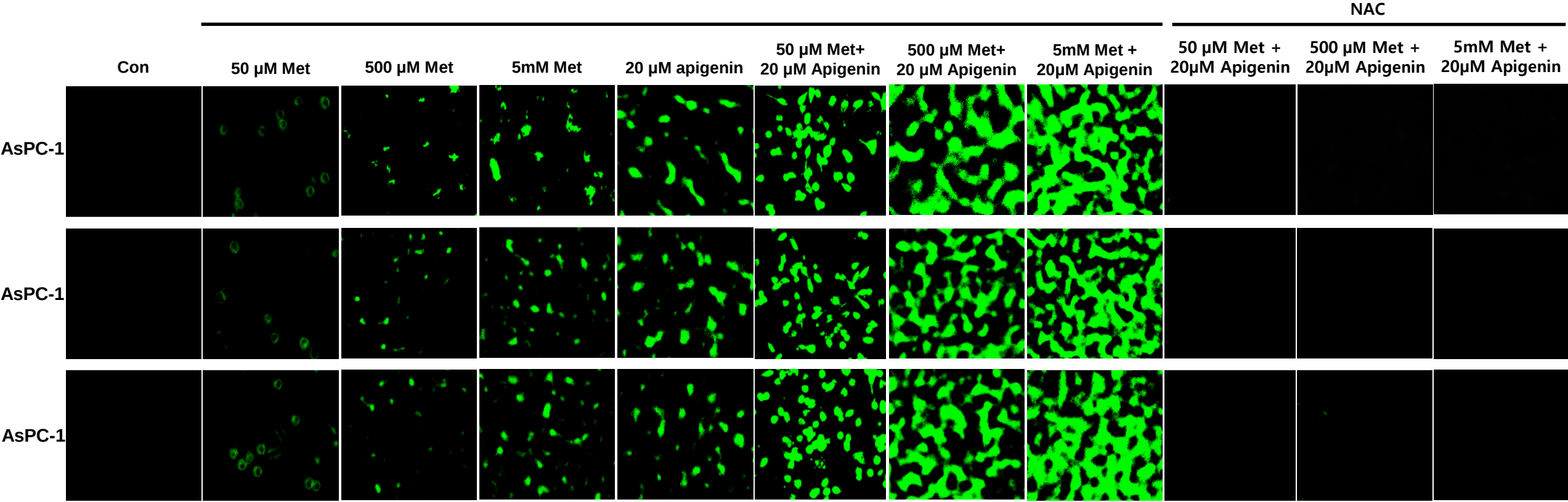


Fig.4 D Membrane potential analysis (AsPC-1)

(D)

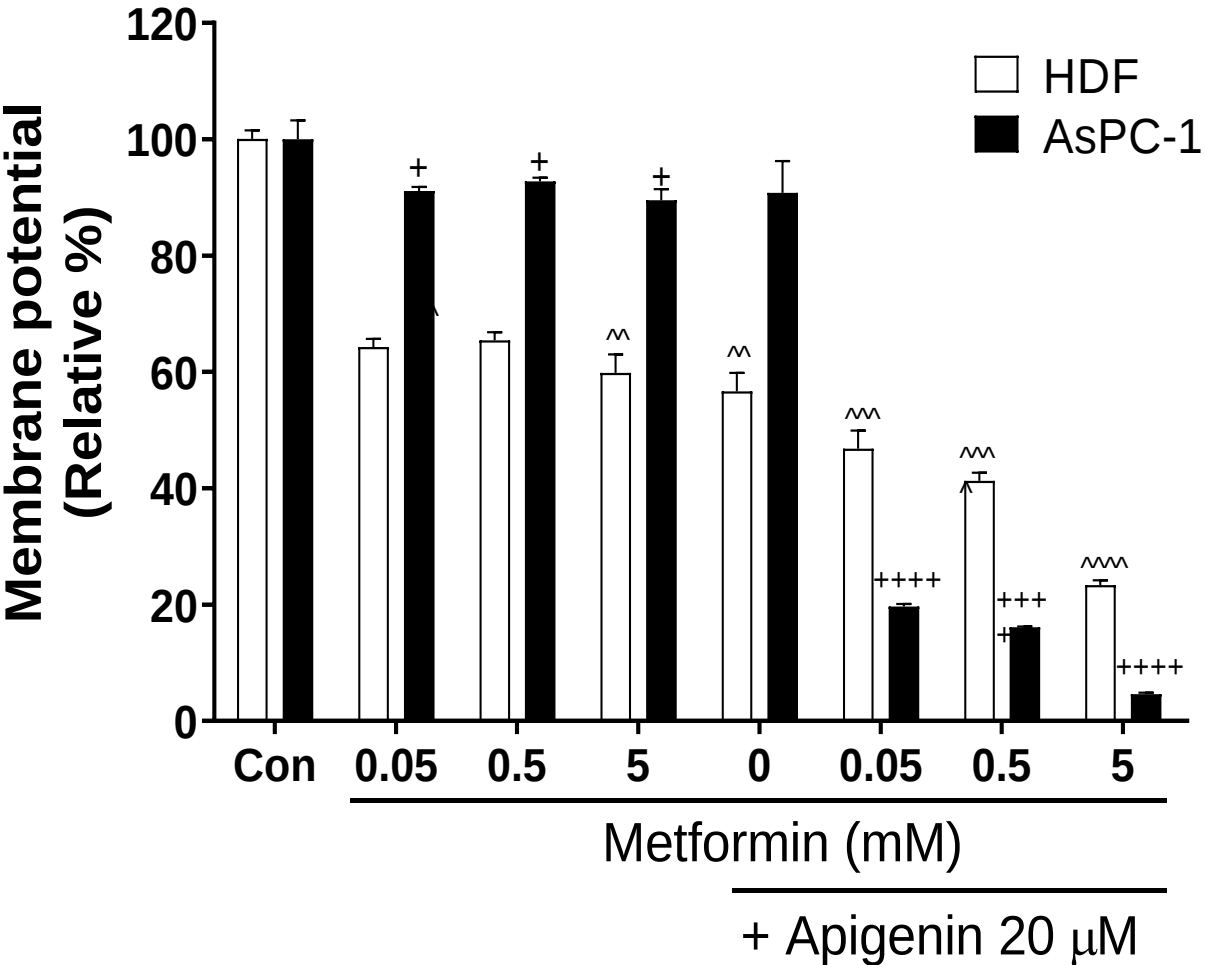


Fig.4 F ROS analysis

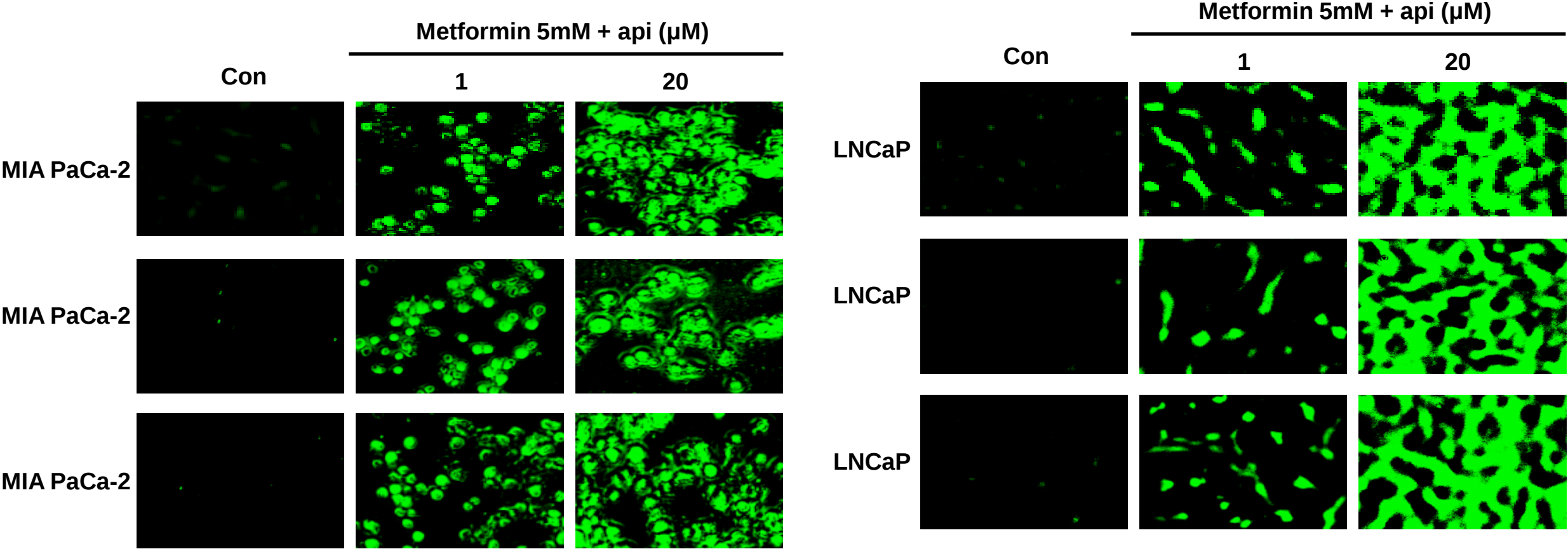


Fig.4 F ROS analysis

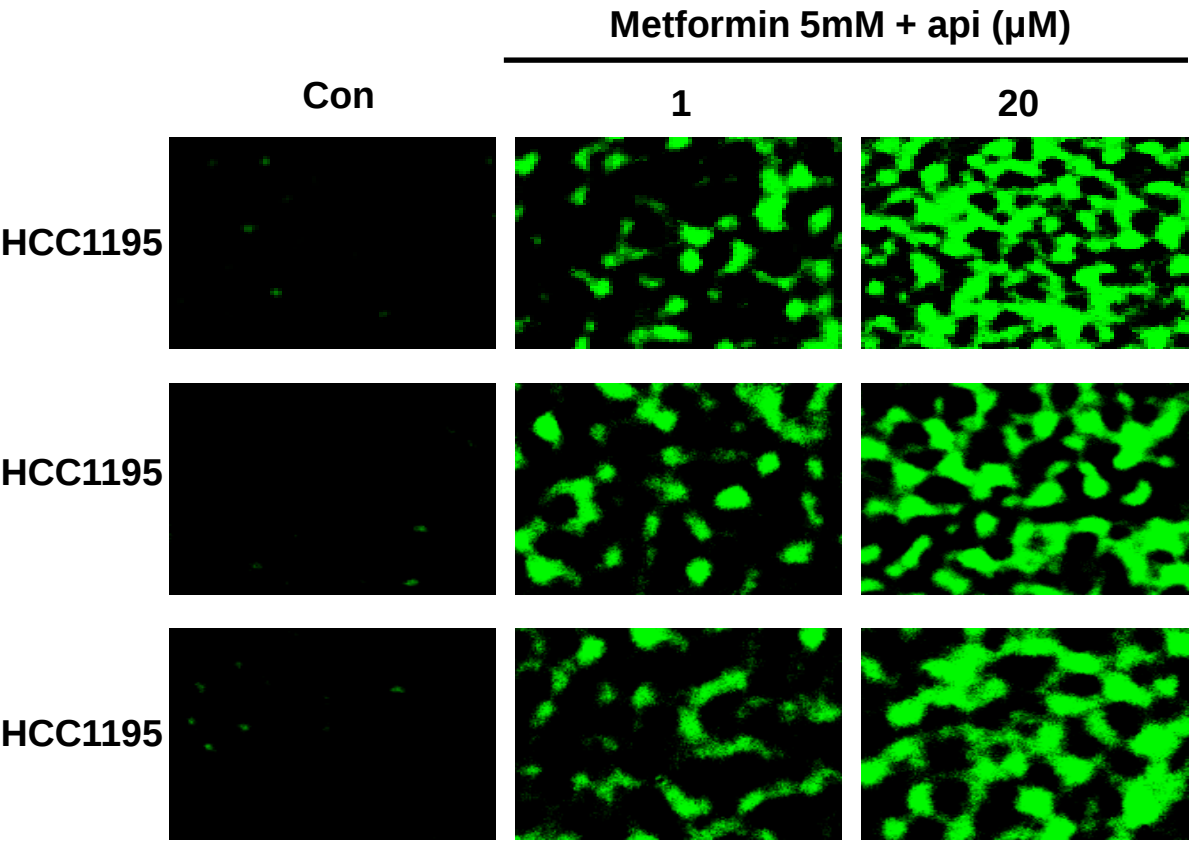
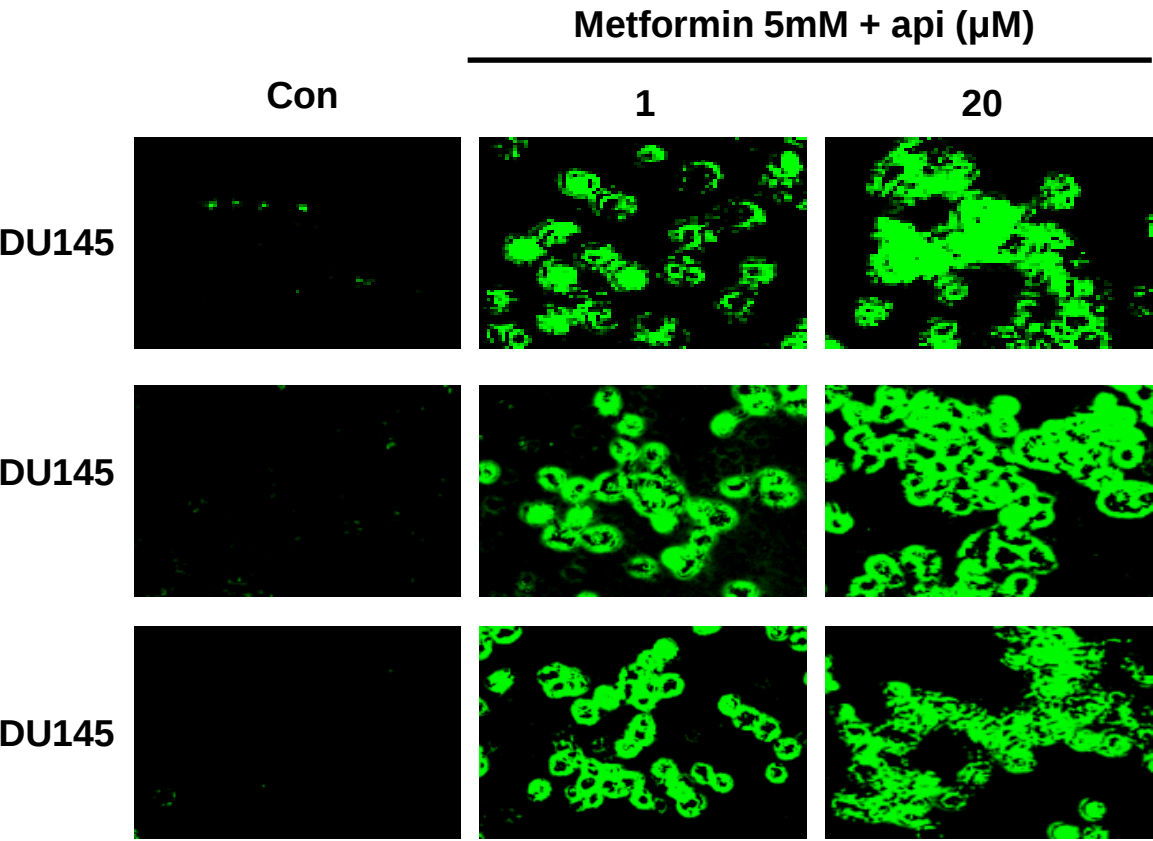


Figure 4 (A) HDF MTT assay

HDF	Metformin+apigenin								
24hrs									
Control	0.209	0.216	0.207	0.211		Control	(4.762)	5.952	4.762
						5mM Me	0.000	13.690	(2.381)
5mM Me	0.219	0.201	0.203			1uM Apig	8.929	11.905	12.500
	(4.762)	5.952	4.762			20uM apig	11.310	7.143	3.571
1uM Apig	0.211	0.189	0.216			5mM Me	13.690	13.095	5.357
	0.000	13.690	(2.381)			5mM Met+20uM Apigenin			
20uM apig	0.196	0.191	0.190						
	8.929	11.905	12.500						
5mM Me	0.192	0.199	0.205						
	11.310	7.143	3.571						
5mM Me	0.188	0.189	0.202						
	13.690	13.095	5.357						
HDF	Metformin+apigenin								
48hrs									
Control	0.241	0.243	0.237	0.240		Control	(0.508)	(1.523)	1.523
	(0.508)	(1.523)	1.523			5mM Me	0.000	10.660	5.076
5mM Me	0.240	0.219	0.230			1uM Apig	6.091	23.858	(1.015)
	0.000	10.660	5.076			20uM apig	10.660	12.690	13.198
1uM Apig	0.228	0.193	0.242			5mM Me	9.645	8.629	6.091
	6.091	23.858	(1.015)			5mM Me	13.198	12.183	9.137
20uM apig	0.219	0.215	0.214						
	10.660	12.690	13.198						
5mM Me	0.221	0.223	0.228						
	9.645	8.629	6.091						
5mM Me	0.214	0.216	0.222						
	13.198	12.183	9.137						

HDF	Metformin+apigenin								
72hrs									
Control	0.294	0.300	0.290	0.295		Control	0.397	(1.984)	1.984
	0.397	(1.984)	1.984			5mM Me	1.190	7.143	4.365
5mM Me	0.292	0.277	0.284			1uM Apig	3.571	18.254	0.397
	1.190	7.143	4.365			20uM apig	8.730	10.714	12.302
1uM Apig	0.286	0.249	0.294			5mM Me	11.508	12.302	6.746
	3.571	18.254	0.397			5mM Me	12.302	15.476	11.111
20uM apig	0.273	0.268	0.264						
	8.730	10.714	12.302						
5mM Me	0.266	0.264	0.278						
	11.508	12.302	6.746						
5mM Me	0.264	0.256	0.267						
	12.302	15.476	11.111						
HDF	Metformin+apigenin								
96hrs									
Control	0.278	0.293	0.273	0.281		Control	1.261	(5.042)	3.361
	1.261	(5.042)	3.361			5mM Me	6.723	(4.202)	10.084
5mM Me	0.265	0.291	0.257			1uM Apig	(4.622)	18.908	18.908
	6.723	(4.202)	10.084			20uM apig	14.706	22.689	22.689
1uM Apig	0.292	0.236	0.236			5mM Me	10.084	10.084	13.866
	(4.622)	18.908	18.908			5mM Me	18.908	17.647	10.084
20uM apig	0.246	0.227	0.227						
	14.706	22.689	22.689						
5mM Me	0.257	0.257	0.248						
	10.084	10.084	13.866						
5mM Me	0.236	0.239	0.257						
	18.908	17.647	10.084						
HDF	Metformin+apigenin								
120hrs									
Control	0.319	0.328	0.321	0.323		Control	1.429	(1.786)	0.714
	1.429	(1.786)	0.714			5mM Me	1.429	9.643	5.714
5mM Me	0.319	0.296	0.307			1uM Apig	7.857	17.857	3.214
	1.429	9.643	5.714			20uM apig	13.571	11.786	15.000
1uM Apig	0.301	0.273	0.314			5mM Me	11.429	8.571	11.071
	7.857	17.857	3.214			5mM Me	16.071	18.571	14.286
20uM apig	0.285	0.290	0.281						
	13.571	11.786	15.000						
5mM Me	0.291	0.299	0.292						
	11.429	8.571	11.071						
5mM Me	0.278	0.271	0.283						
	16.071	18.571	14.286						

Figure 4 (A) AsPC-1 MTT assay

ASPC-1 24 hrs				Avg							
Control				0.270 0.258 0.267 0.265				Control (2.232) 3.125 (0.893)			
5mM Met				0.201 0.213 0.210				5mM Met 28.571 23.214 24.554			
				28.571 23.214 24.554				1uM Api 13.393 12.500 8.482			
1uM Api				0.235 0.237 0.246				20uM Api 19.196 23.661 21.429			
				13.393 12.500 8.482				5mM Met 28.571 34.821 33.036			
20uM Api				0.222 0.212 0.217				5mM Met 54.464 58.929 56.696			
				19.196 23.661 21.429							
5mM Met				0.201 0.187 0.191							
				28.571 34.821 33.036							
5mM Met				0.143 0.133 0.138							
				54.464 58.929 56.696							
ASPC-1 48 hrs				Avg				Control (1.111) (0.833) 1.667			
Control				0.405 0.404 0.395 0.401				5mM Met 22.222 21.389 21.944			
				(1.111) (0.833) 1.667				1uM Api 7.778 6.417 5.000			
5mM Met				0.321 0.324 0.322				20uM Api 9.167 8.889 12.500			
				22.222 21.389 21.944				5mM Met 40.833 40.278 39.722			
1uM Api				0.373 0.378 0.383				5mM Met 70.000 68.611 68.611			
				7.778 6.417 5.000							
20uM Api				0.368 0.369 0.356							
				9.167 8.889 12.500							
5mM Met				0.254 0.256 0.258							
				40.833 40.278 39.722							
5mM Met				0.149 0.154 0.154							
				70.000 68.611 68.611							

ASPC-1	72hr			Avg			Control	0.000	(0.000)	(0.000)
	Control	0.454	0.463	0.463	0.462		5mM Met	24.941	24.466	25.178
		0.000	(0.000)	(0.000)			1uM Api	8.314	9.739	10.214
	5mM Met	0.357	0.359	0.356			20uM Api	19.715	20.428	18.765
		24.941	24.466	25.178			5mM Met	56.532	55.582	56.057
	1uM Api	0.427	0.421	0.419			5mM Met	86.223	83.848	82.185
		8.314	9.739	10.214						
	20uM Api	0.379	0.376	0.383						
		19.715	20.428	18.765						
	5mM Met	0.224	0.228	0.226						
ASPC-1	96hr			avg			Control	0.000	(0.000)	(0.000)
	Control	0.370	0.373	0.412	0.385		5mM Met	4.360	3.488	(7.849)
		4.360	3.488	(7.849)			1uM Api	51.163	50.000	49.419
	5mM Met	0.209	0.213	0.215			20uM Api	43.605	42.733	39.535
		51.163	50.000	49.419			5mM Met	46.221	45.930	47.384
	1uM Api	0.235	0.238	0.249			5mM Met	57.558	58.430	55.233
		43.605	42.733	39.535				100.581	95.058	91.570
	20uM Api	0.226	0.227	0.222						
		46.221	45.930	47.384						
	5mM Met	0.187	0.184	0.195						
ASPC-1	#####			avg			Control	2.863	(1.542)	(1.322)
	Control	0.481	0.501	0.500	0.494		5mM Met	31.567	32.009	31.567
		2.863	(1.542)	(1.322)			1uM Api	18.764	18.985	19.205
	5mM Met	0.351	0.349	0.351			20uM Api	27.373	26.711	28.698
		31.567	32.009	31.567			5mM Met	64.018	61.810	60.265
	1uM Api	0.409	0.408	0.407			5mM Met	99.558	98.675	99.117
		18.764	18.985	19.205						
	20uM Api	0.370	0.373	0.364						
		27.373	26.711	28.698						
	5mM Met	0.204	0.214	0.221						

Figure 4. D) Mitochondrial membrane potential AsPC-1 and HDF cells

ASPC-1 Membrane potential					
Control	0.5mM Metformin	5mM Metformin	20uM Apigenin	0.5mM Metformin+20uM Apigenin	5mM Metformin+20uM Apigenin
0.9	0.89	0.89	0.78	0.153	0.041
0.991	0.87	0.867	0.962	0.155	0.049
0.995	0.877	0.827	0.879	0.157	0.043
HDF Membrane potential					
Control	0.5mM Metformin	5mM Metformin	20uM Apigenin	0.5mM Metformin+20uM Apigenin	5mM Metformin+20uM Apigenin
0.272	0.181	0.175	0.162	0.112	0.064
0.285	0.188	0.174	0.14	0.122	0.069
0.275	0.175	0.148	0.169	0.109	0.061

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Fig.5 A western blot analysis (HDF)

(A)

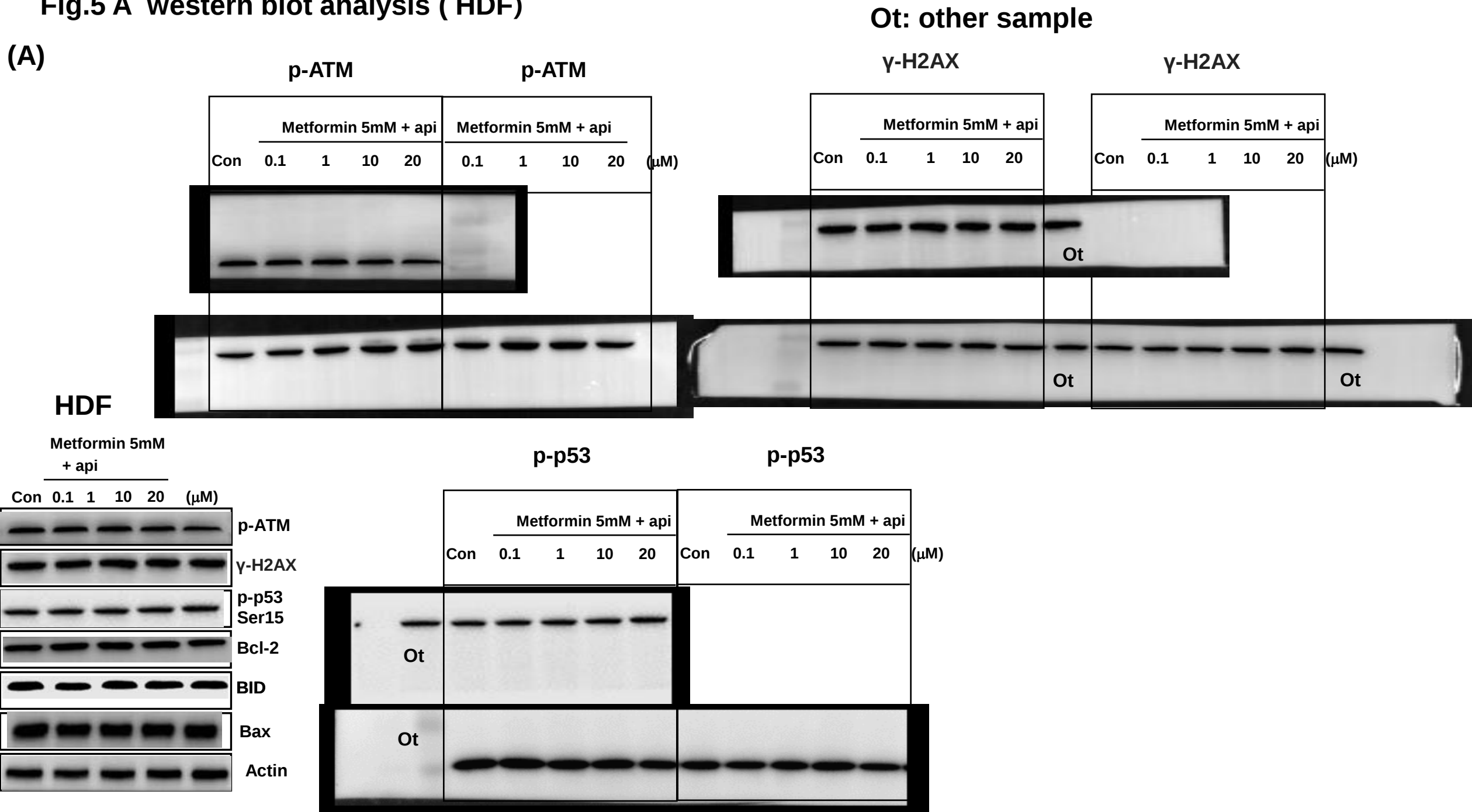
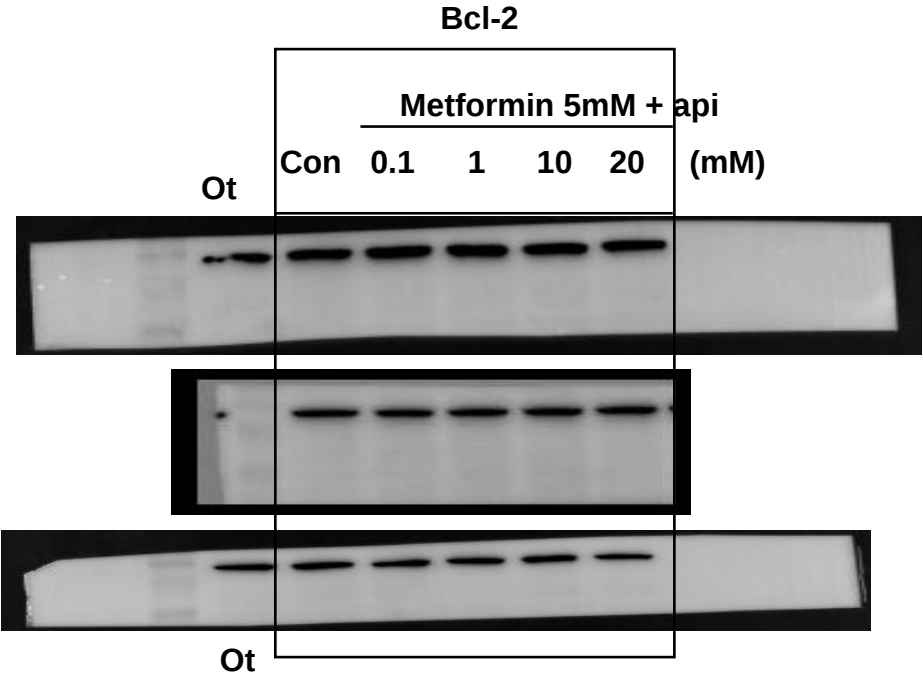
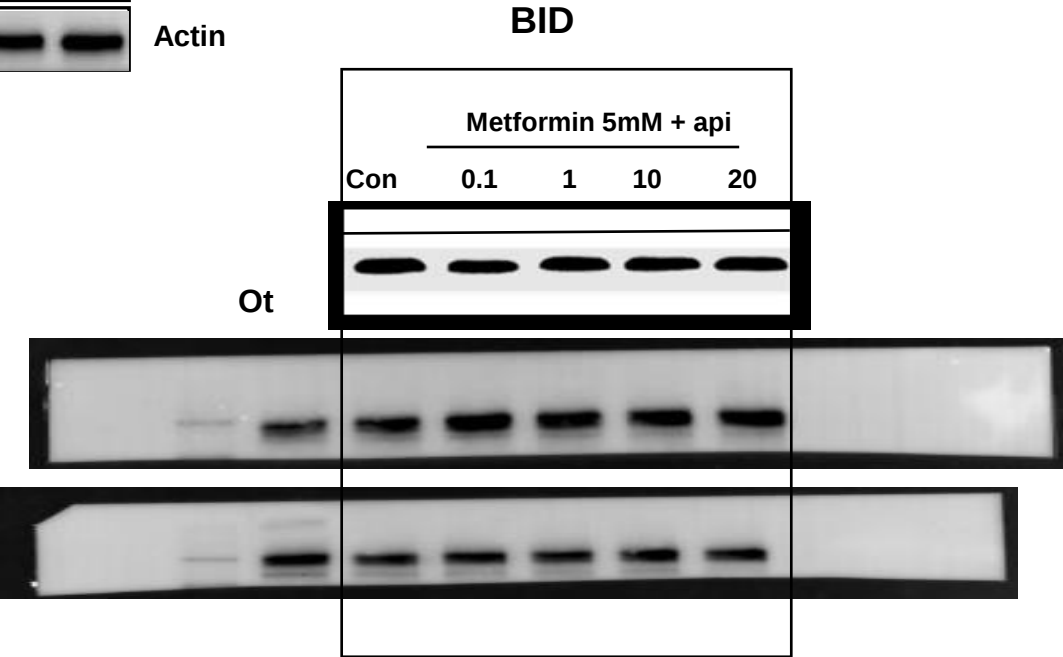
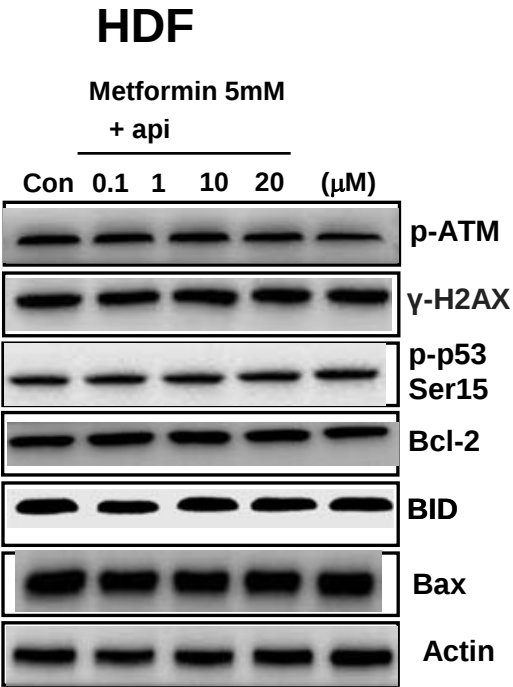


Fig.5 A western blot analysis (HDF)

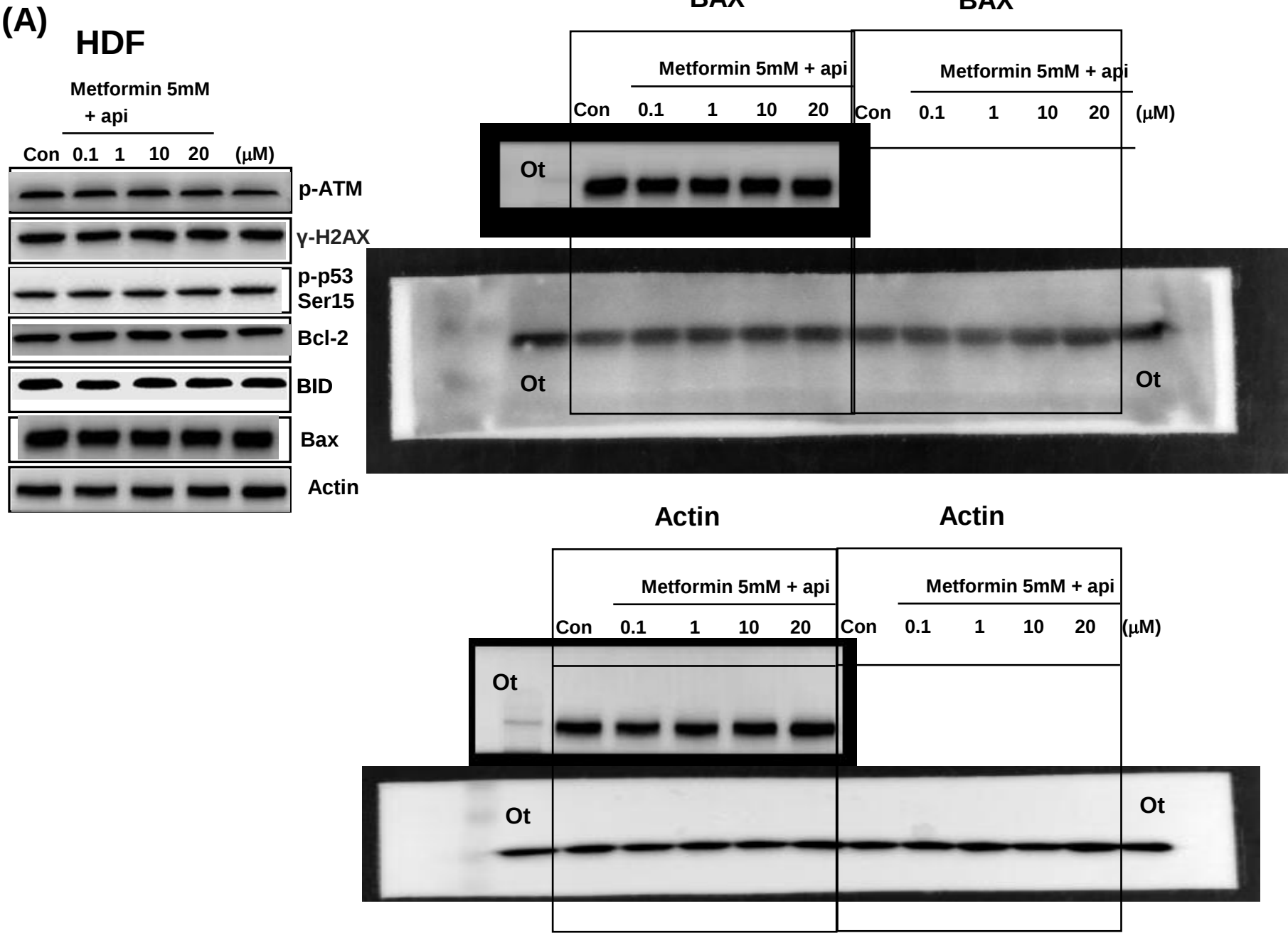
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Ot

Fig.5 A western blot analysis (HDF)

Ot: other sample



Ot: other sample

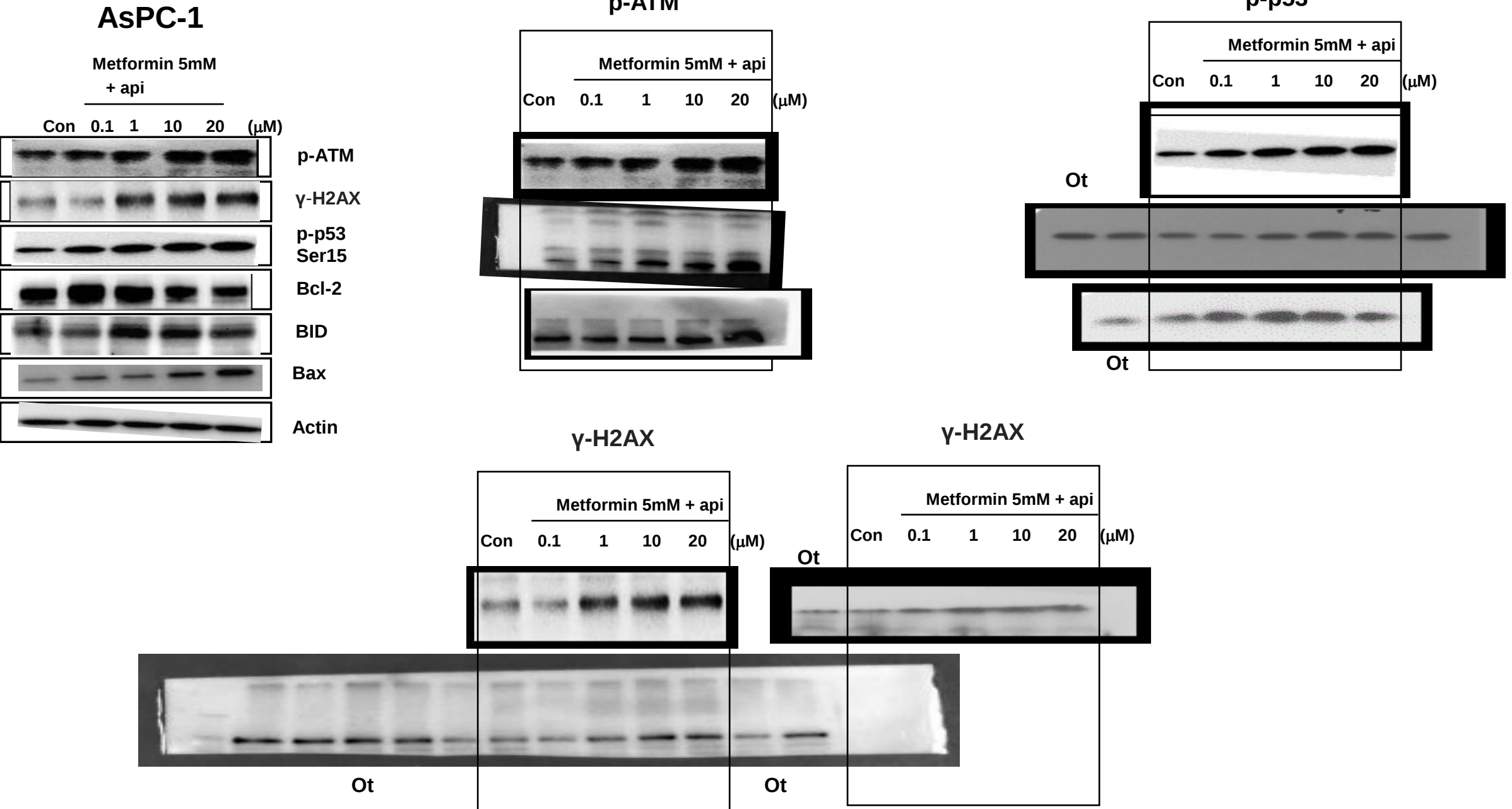


Fig.5 A western blot analysis (AsPC-1)

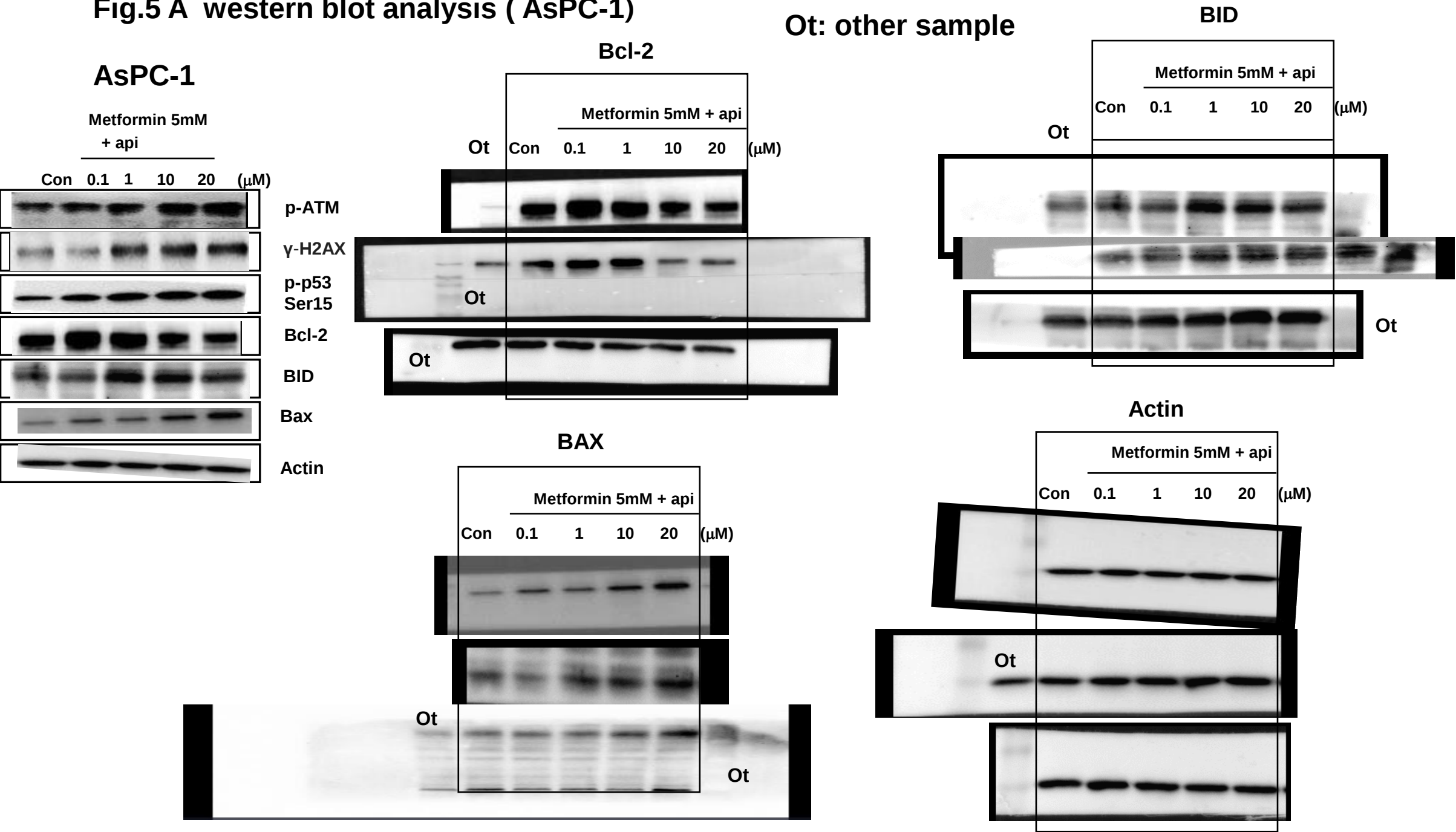


Fig.5 B western blot analysis (HDF)

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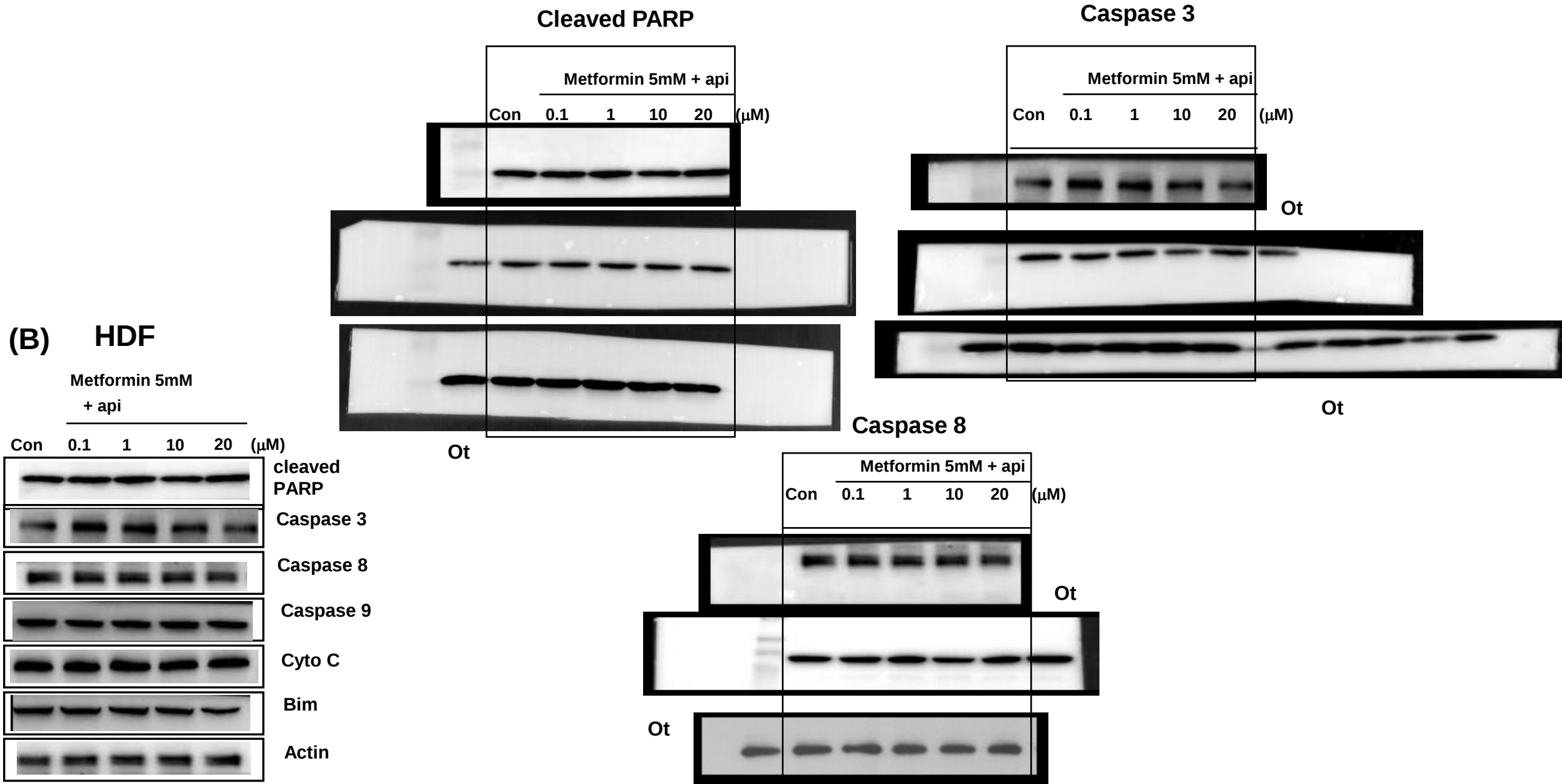


Fig.5 B western blot analysis (HDF)

(B) HDF

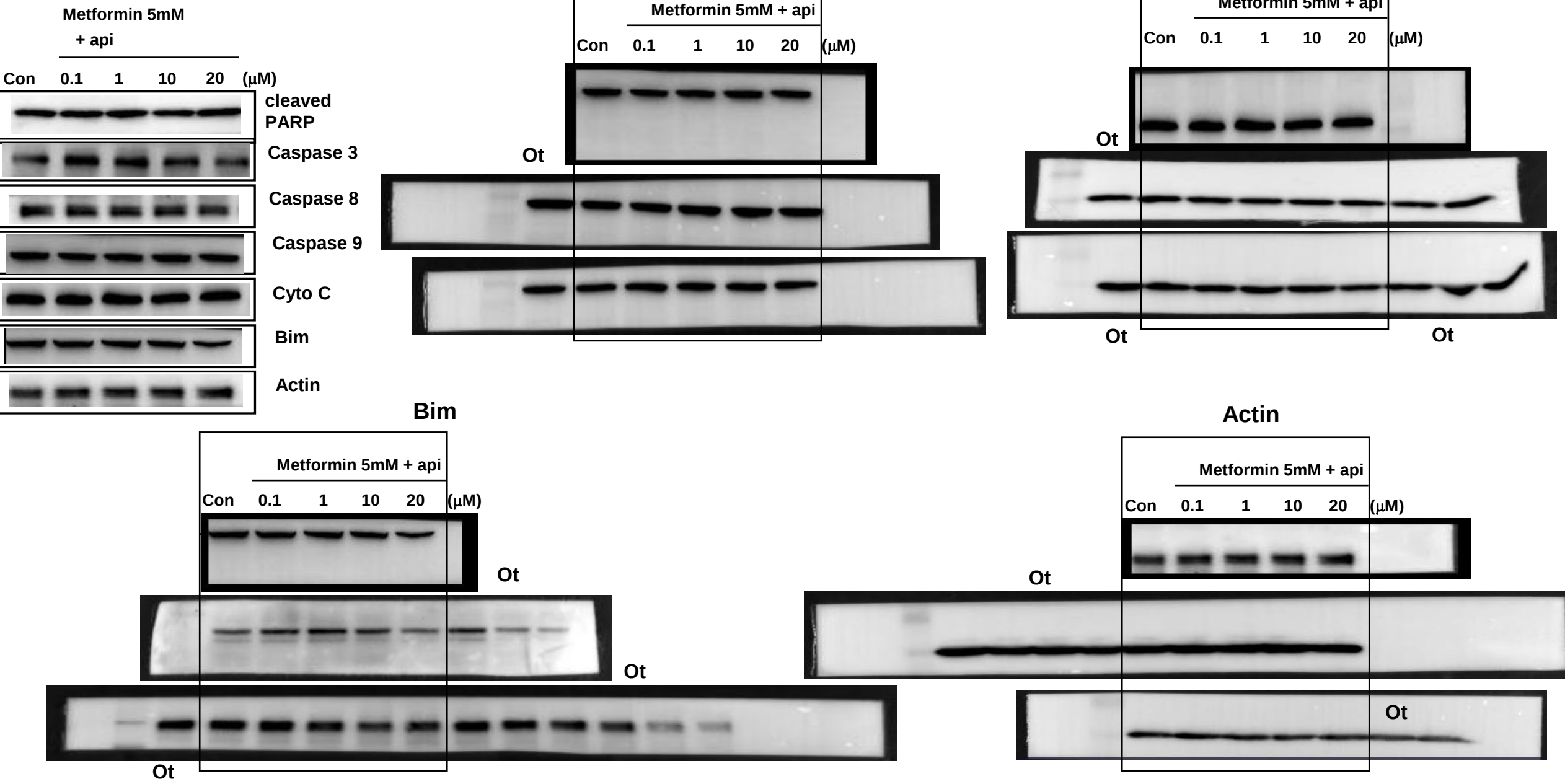


Fig.5 B western blot analysis (AsPC-1)

Ot: other sample

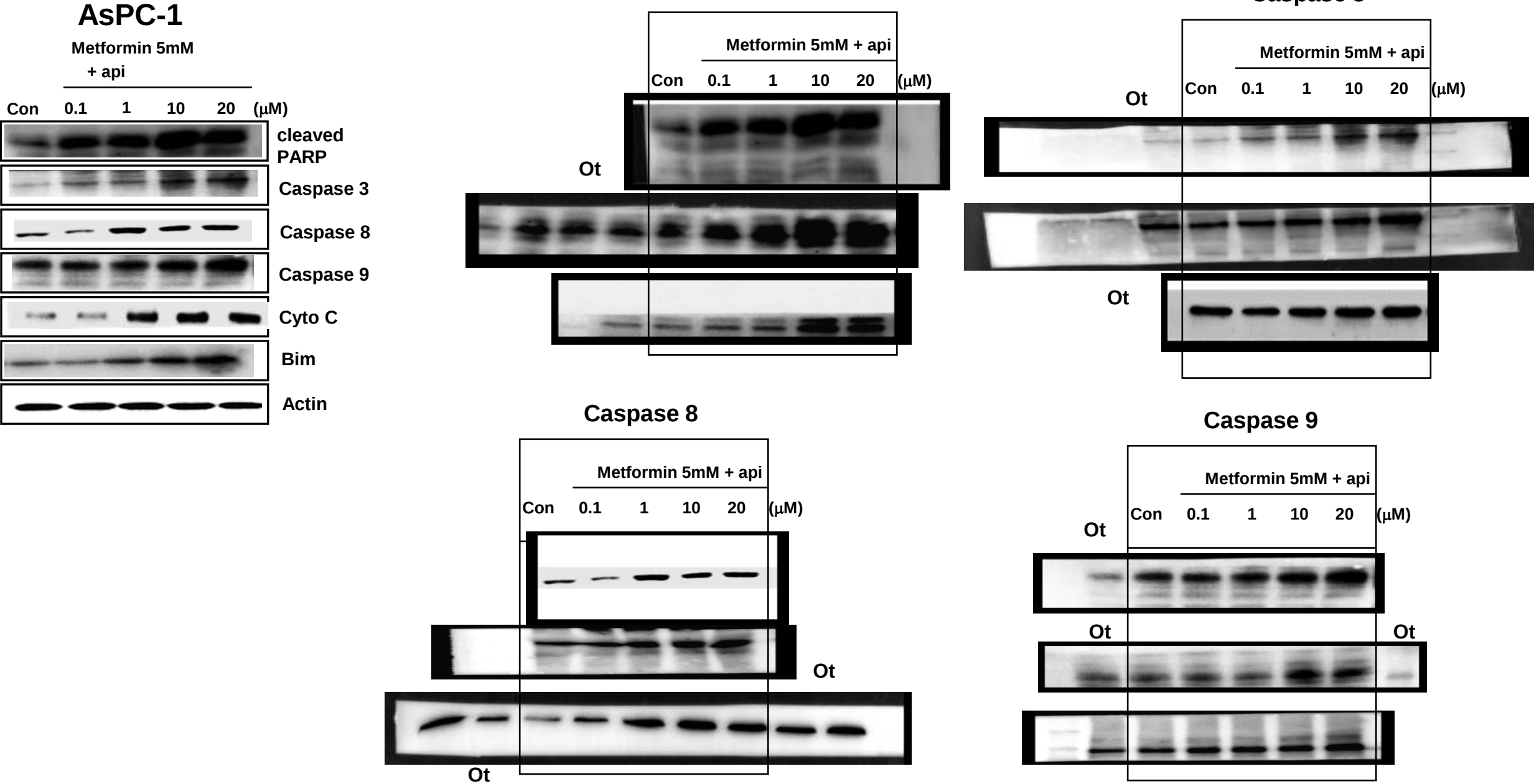
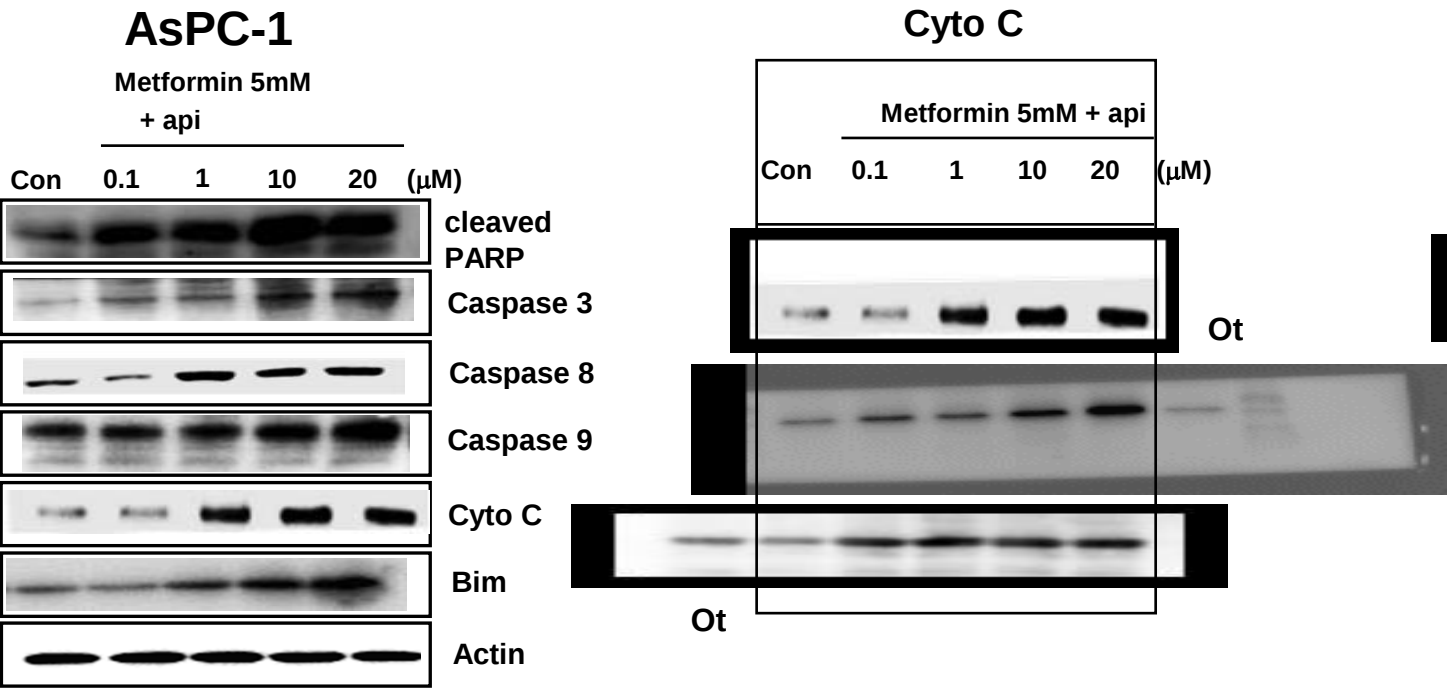


Fig.5 B western blot analysis (AsPC-1)



Ot: other sample

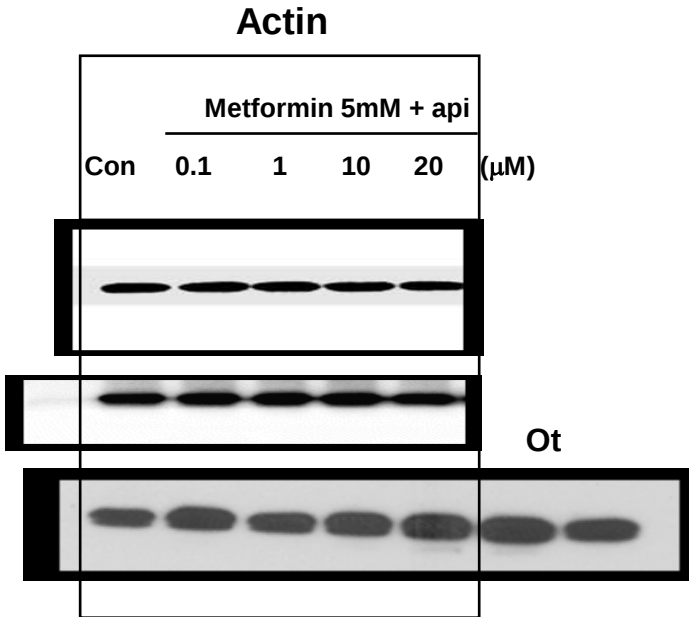
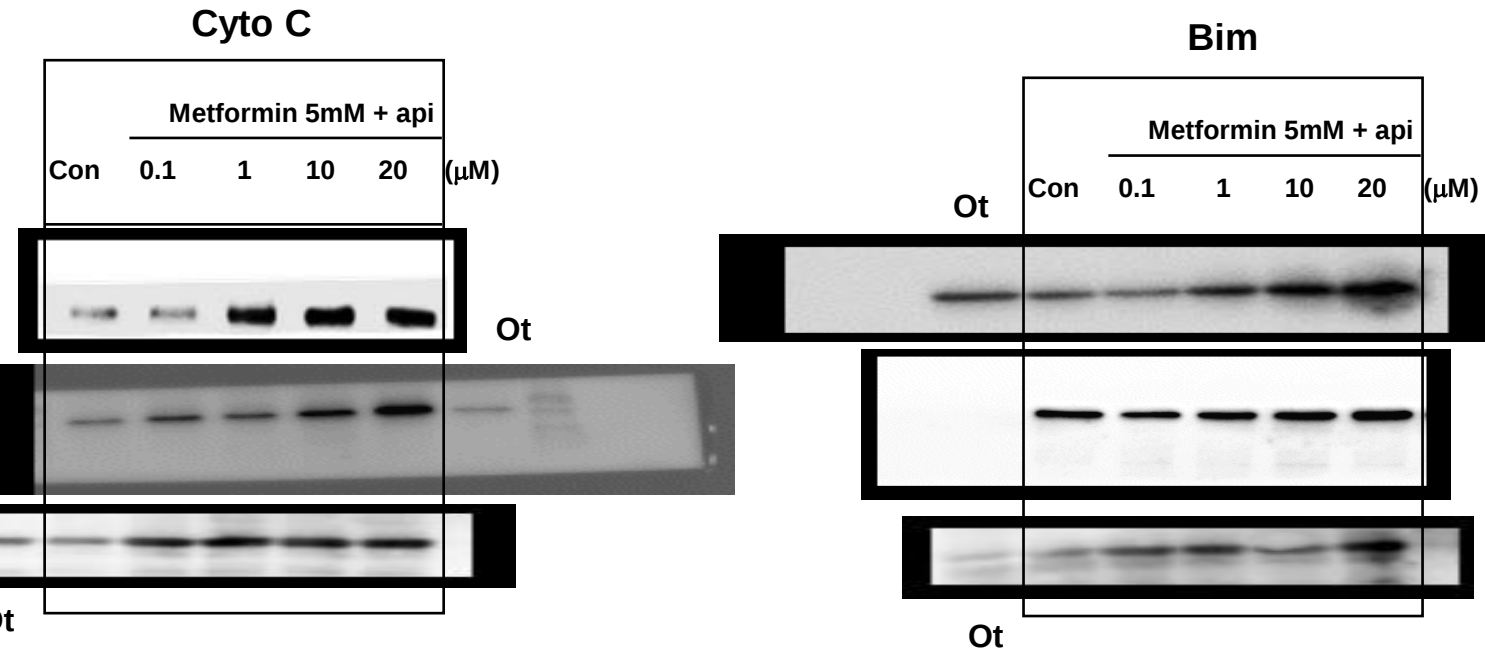


Fig.6 A western blot analysis (HDF)

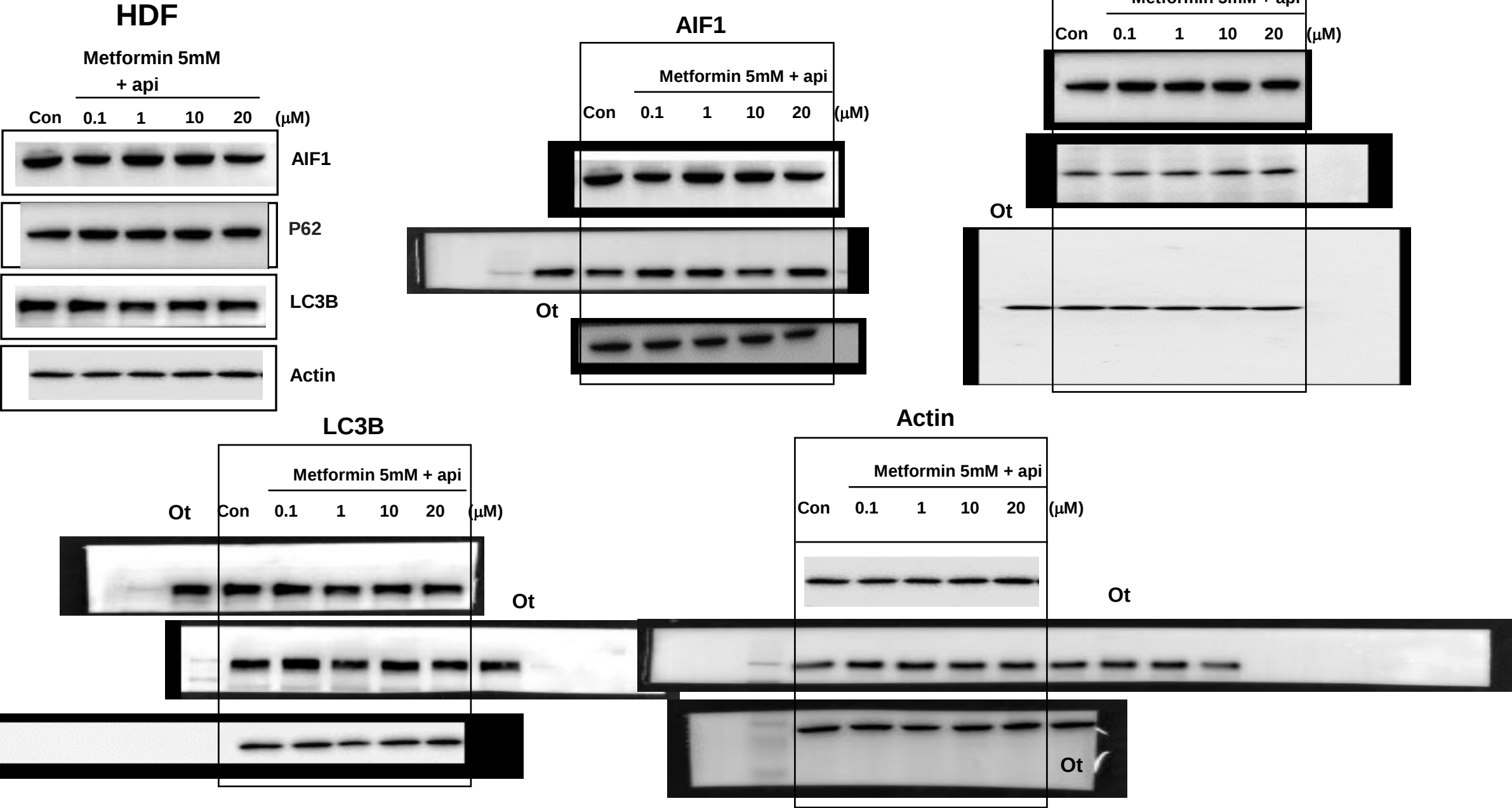


Fig.6 A western blot analysis (AsPC-1)

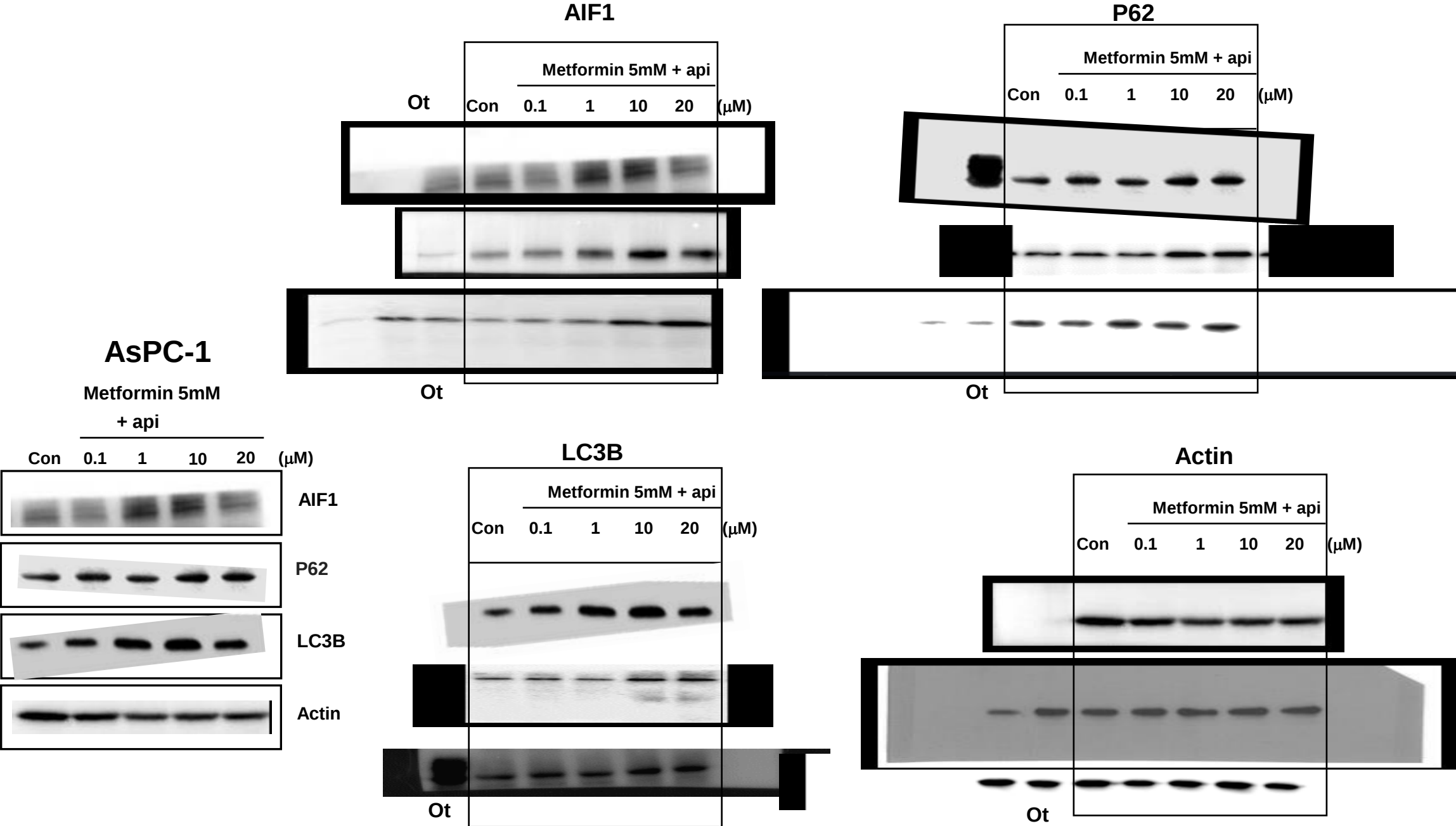
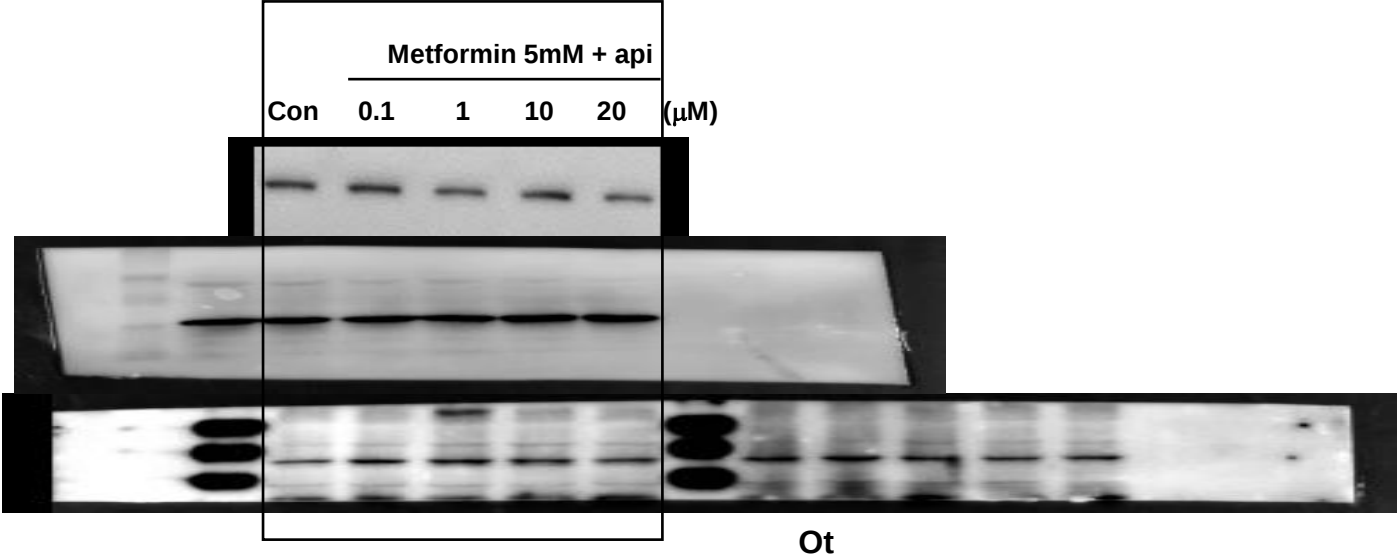


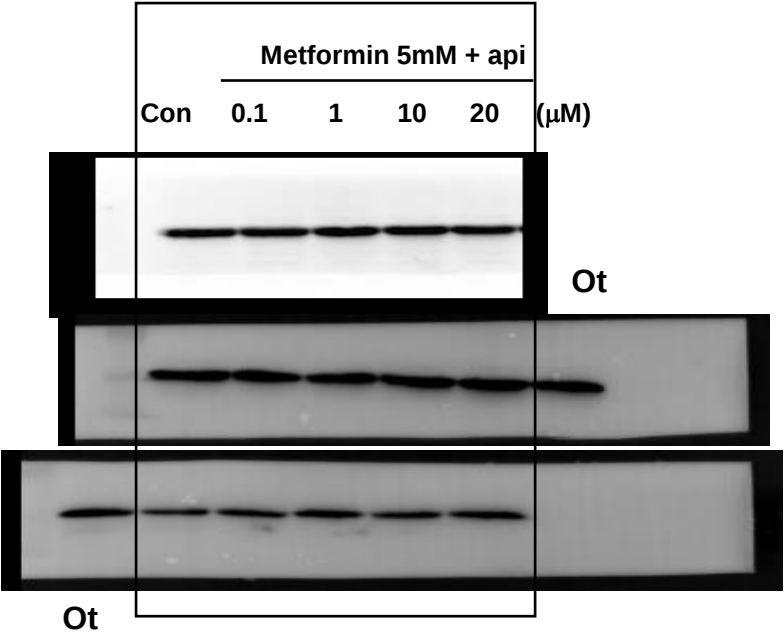
Fig.6 B western blot analysis (HDF)

MLKL

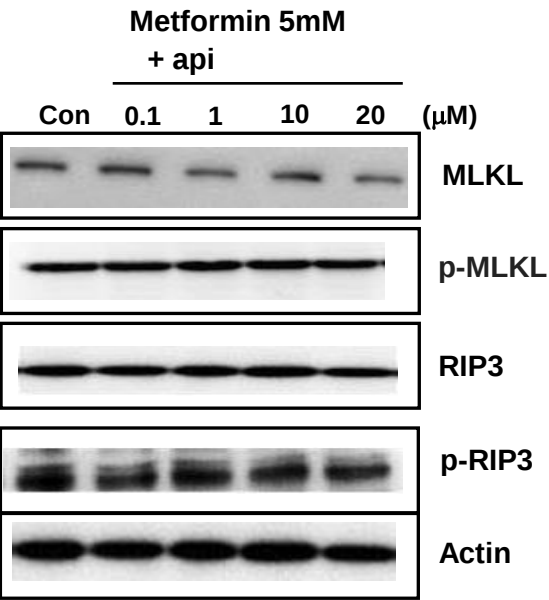


Ot: other sample

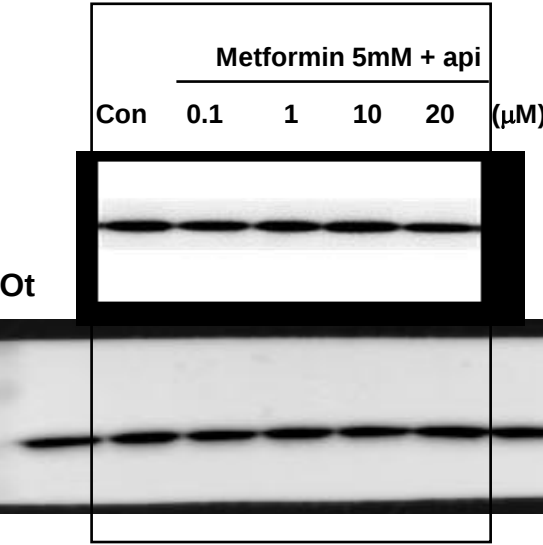
p-MLKL



HDF



RIP3



RIP3

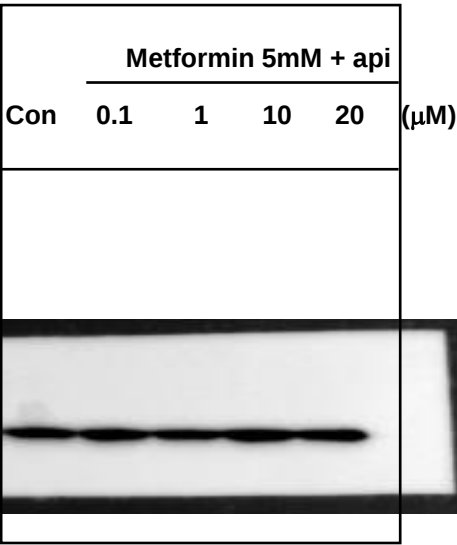


Fig.6 B western blot analysis (HDF)

Ot: other sample

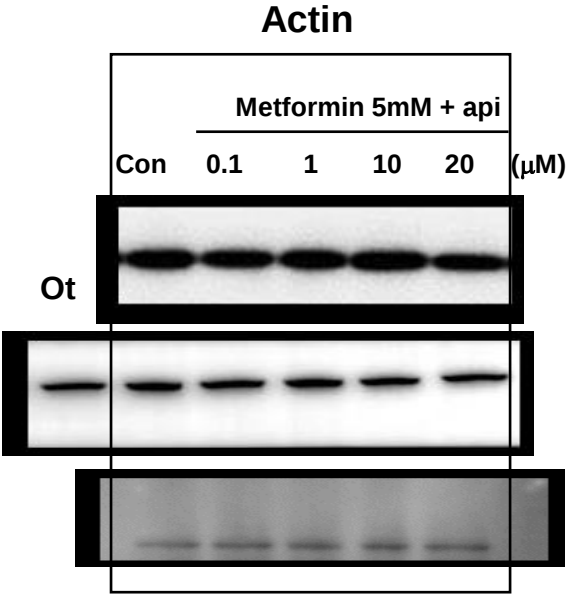
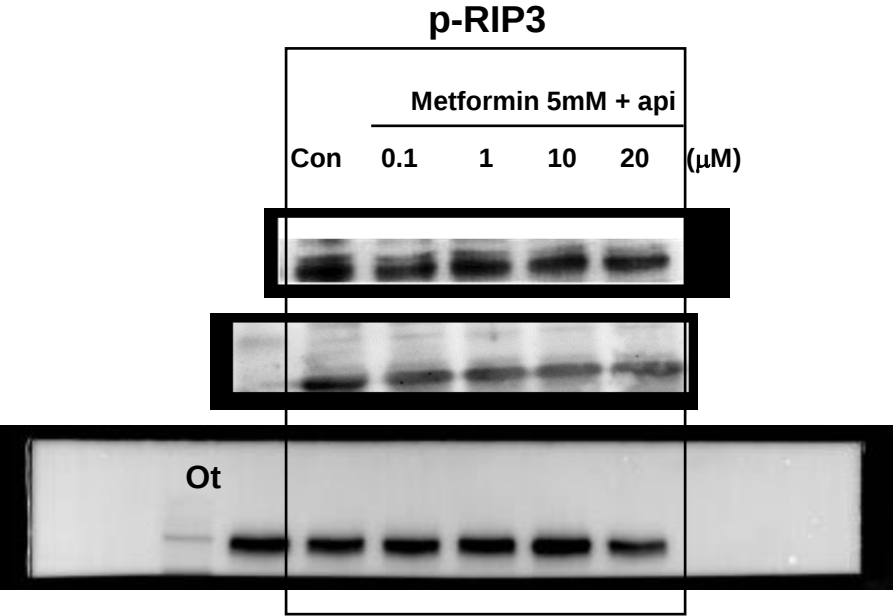
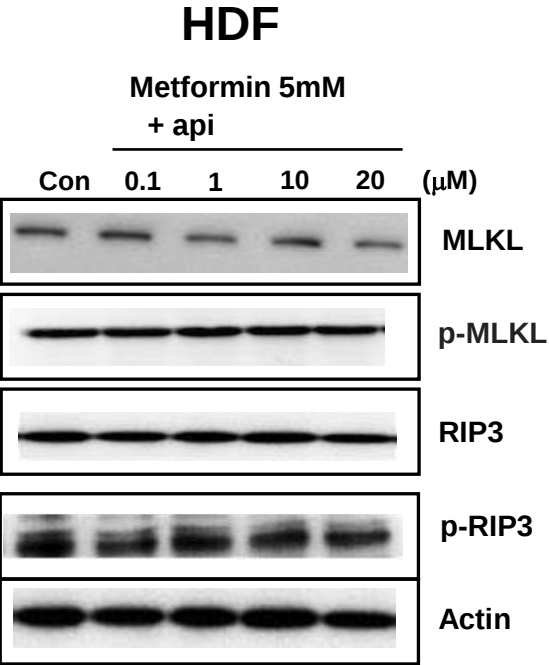
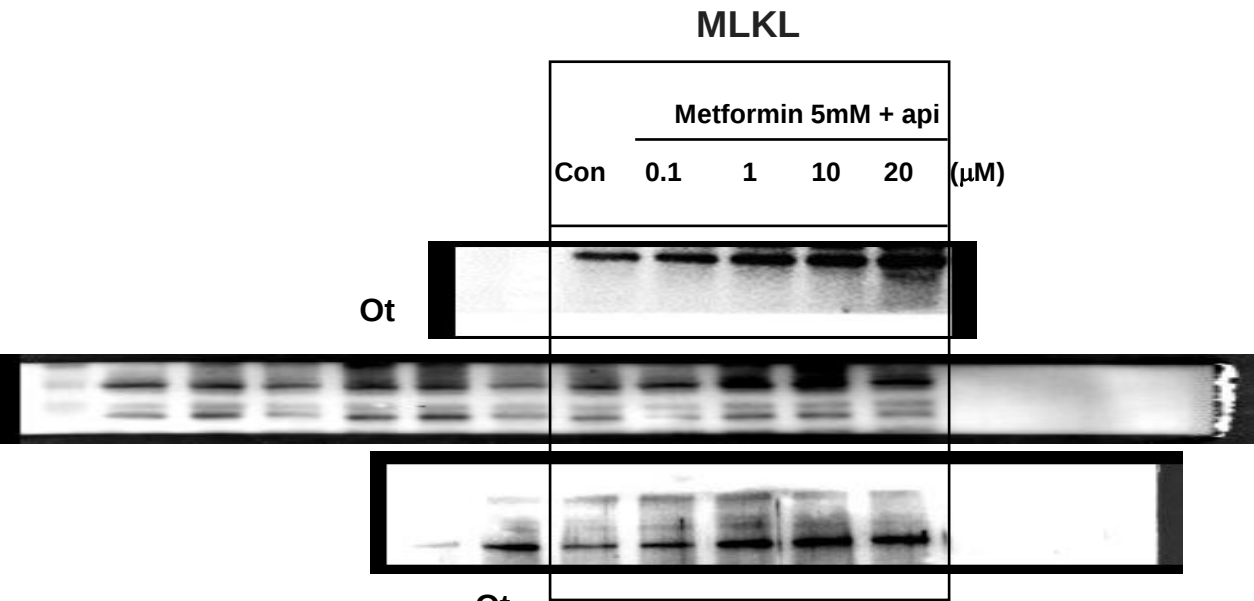
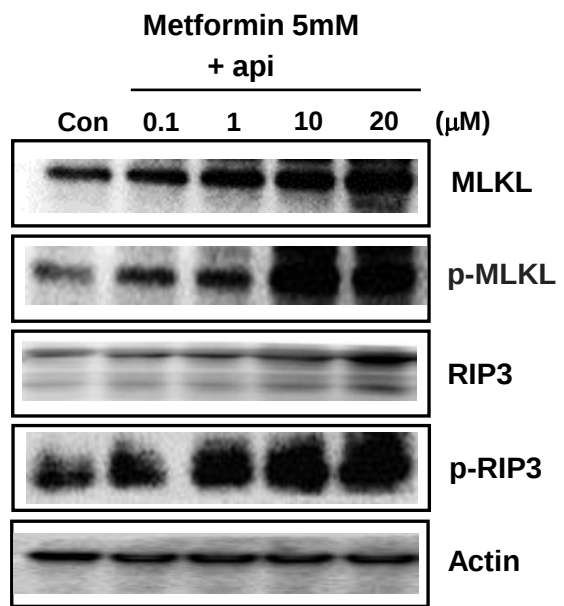


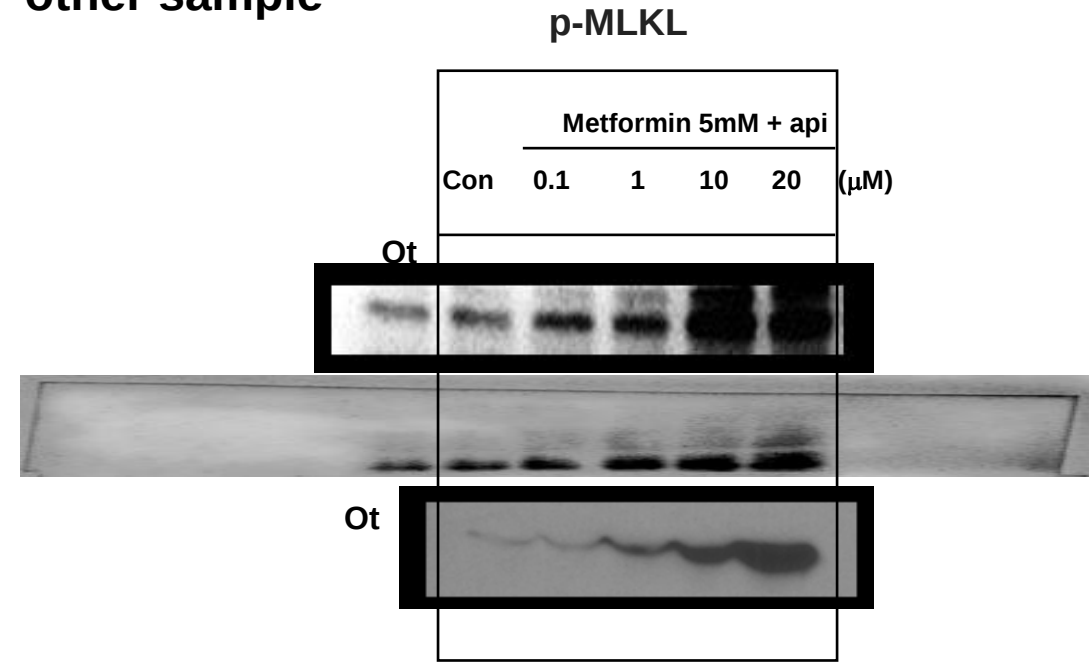
Fig.6 B western blot analysis (AsPC-1)



AsPC-1



Ot: other sample



RIP3

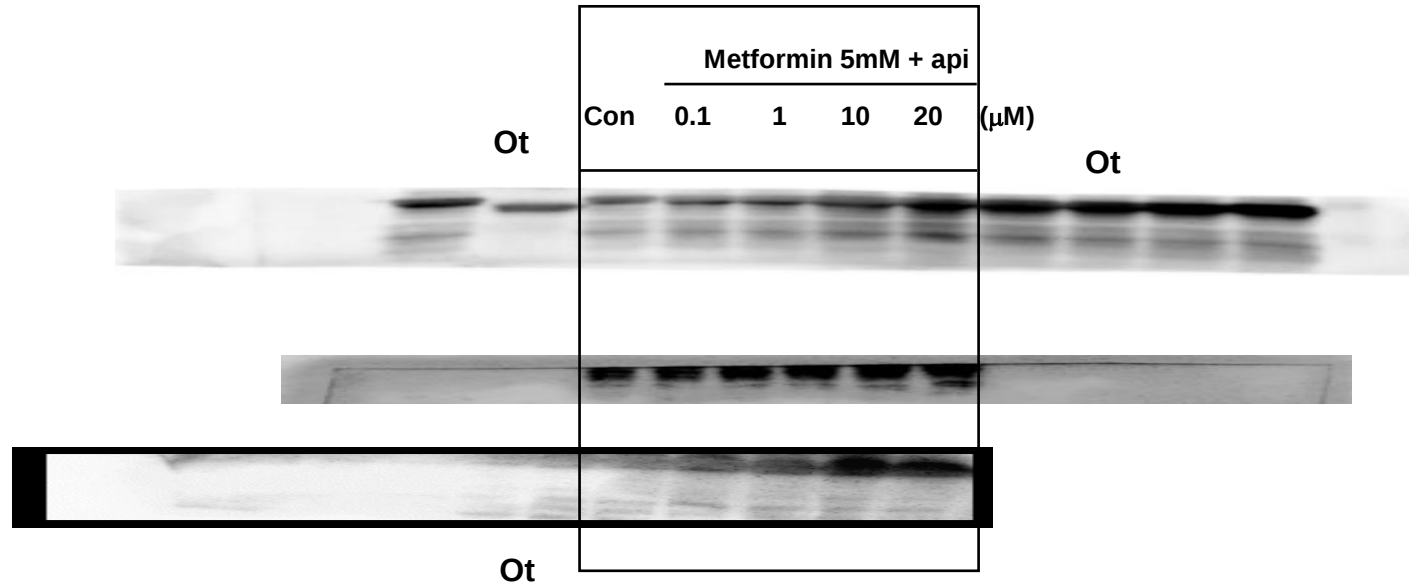


Fig.6 B western blot analysis (AsPC-1)

Ot: other sample

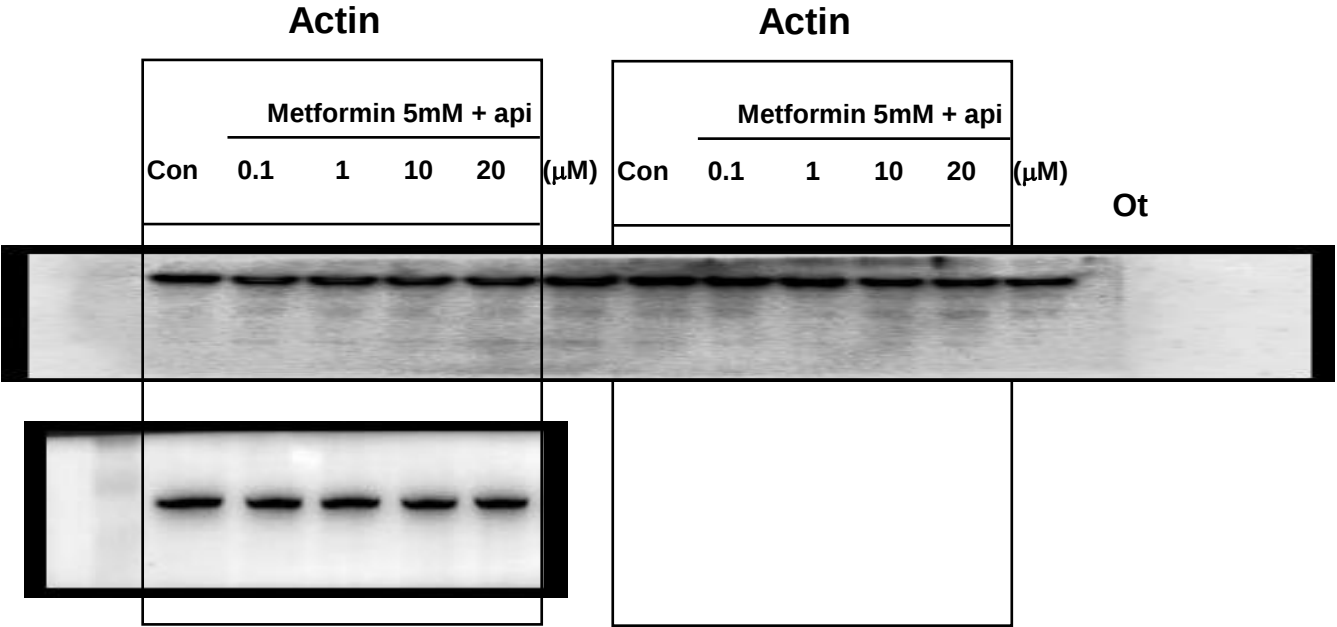
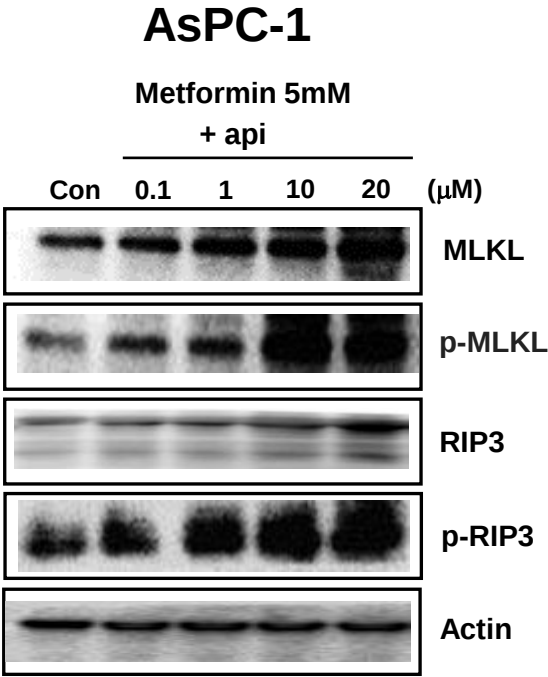
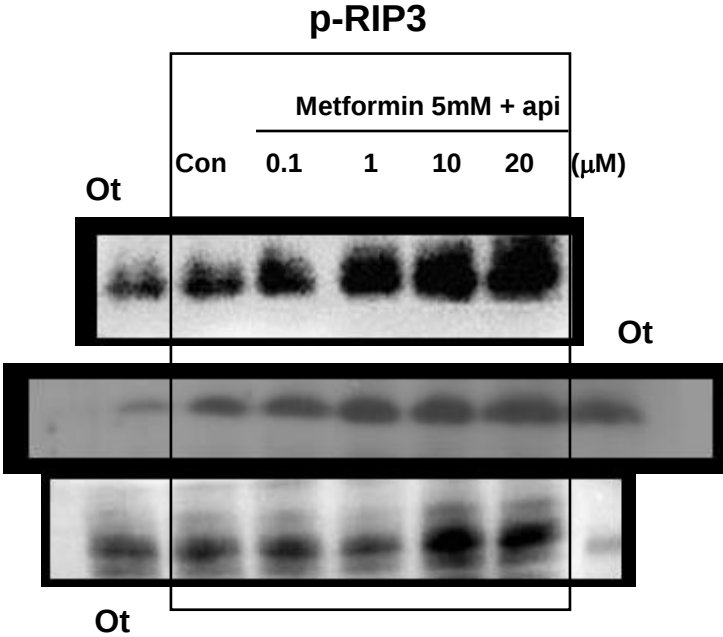


Figure 7A Animal study low dose raw data (tumor volume)

GROUP	NO.	DAY 0	DAY 7	DAY 14	DAY 21	DAY 28
Control	1	80	90	405	850	1258
	2	68	150	430	950	1200
	3	70	190	195	248	750
	4	69	145	150	290	658
	5	90	170	250	756	1400
	6	93	176	350	570	880
	7	85	125	175	425	950
	8	95	150	180	670	750
AVERAGE		81.25	149.50	266.88	594.88	980.75
SE		3.94	11.12	39.57	91.18	96.59
Metformin 75 mg/kg	1	95	130	350	750	1450
	2	85	80	240	350	780
	3	84	130	50	75	126
	4	70	80	48	280	370
	5	85	120	420	680	1250
	6	75	90	120	400	980
	7	78	99	240	680	850
AVERAGE		81.71	104.14	209.71	459.29	829.43
SE		3.08	8.42	54.65	94.77	175.49
Apigenin 5 mg/kg	1	85	95	150	650	960
	2	82	65	180	530	840
	3	80	120	250	450	760
	4	91	150	196	340	890
	5	83	96	138	490	780
	6	75	120	240	570	975
	7	73	115	225	670	800
AVERAGE		81.29	108.71	197.00	528.57	857.86
SE		2.30	10.07	16.49	43.56	32.55
Met+Api (75+5 mg/kg)	1	80	62.5	85	120	170
	2	90	87	110	160	200
	3	82	76	130	140	310
	4	78	102	180	240	300
	5	83	90	175	268	520
	6	80	85	115	380	850
	7	75	95	200	420	920
AVERAGE		81.14	85.36	142.14	246.86	467.14
SE		1.78	4.89	16.21	44.52	116.16

Figure 7B Animal study low dose raw data
(tumor weight)

	Control	Metformin 75 mg/kg	Apigenin 5 mg/kg	Met 75 + Api 5 mg/kg
1	450	420	432	305
2	412	445	298	270
3	421	382	420	273
4	320	371	430	281
5	505	320	330	332
6	480	280	342	255
7	432	452	428	250
8	412			
AVERAGE	429.00	381.43	382.86	280.86
SE	19.53	24.24	21.67	10.91

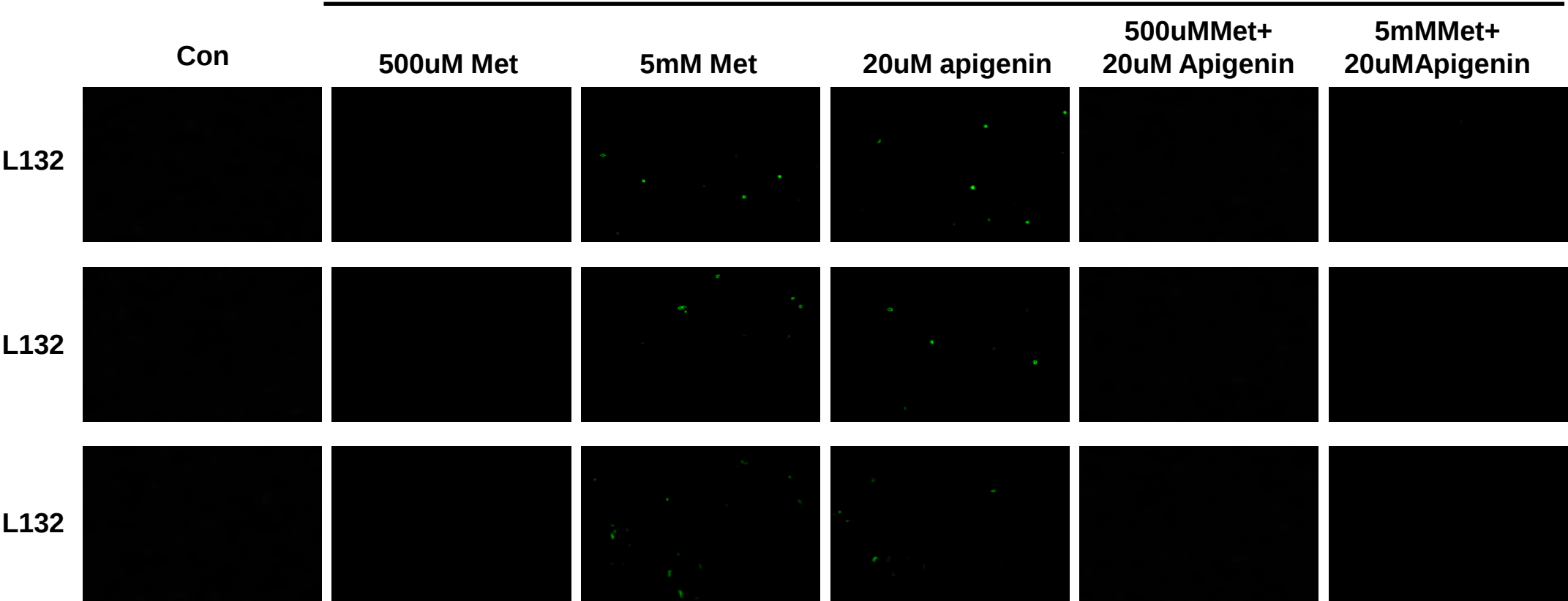
Figure 7D Animal study high dose raw data (tumor volume)

GROUP	NO.	DAY 1	DAY 8	DAY 15	DAY 22	DAY 28
Control	1	80	75	600	1267.5	1436.5
	2	67.5	126	445.5	650	1568
	3	67.5	75	171.5	220.5	864
	4	67.5	108	108	288	405
	5	92.5	144	320	786.5	1912.5
	6	92.5	126	364.5	352	700
	7	80	126	196	320	786.5
	8	92.5	144	108	288	600
AVERAGE		80.00	115.50	289.19	521.56	1034.06
SE		4.09	9.72	62.08	127.63	189.20
Metformin 125 mg/kg	1	113	144	405	665.5	1912.5
	2	80	75	171.5	144	320
	3	80	126	32	62.5	126
	4	67.5	75	18	0	0
	5	80	108	600	786.5	1152
	6	67.5	87.5	32	0	32
	7	80	75	32	0	0
	8	80	87.5	13.5	0	0
AVERAGE		81.00	97.25	163.00	207.31	442.81
SE		4.99	9.26	78.43	115.13	251.26
Apigenin 40 mg/kg	1	80	48	0	32	62.5
	2	80	48	18	0	0
	3	82.5	56	22.5	0	4
	4	92.5	62.5	22.5	0	0
	5	80	48	22.5	320	550
	6	80	87.5	75	245	550
	7	80	87.5	112.5	0	0
	8	80	48	18	0	0
AVERAGE		81.88	60.69	36.38	74.63	145.81
SE		1.55	6.13	13.27	46.08	88.52
Met+Api (125+40 mg/kg)	1	80	62.5	0	13.5	100
	2	92.5	32	0	0	0
	3	80	32	0	0	0
	4	80	40	0	0	4
	5	80	75	0	40	196
	6	80	13.5	6	4	10
	7	67.5	62.5	18	0	0
	8	80	18	0	0	0
AVERAGE		80.00	41.94	3.00	7.19	38.75
SE		2.36	7.93	2.27	4.97	25.54

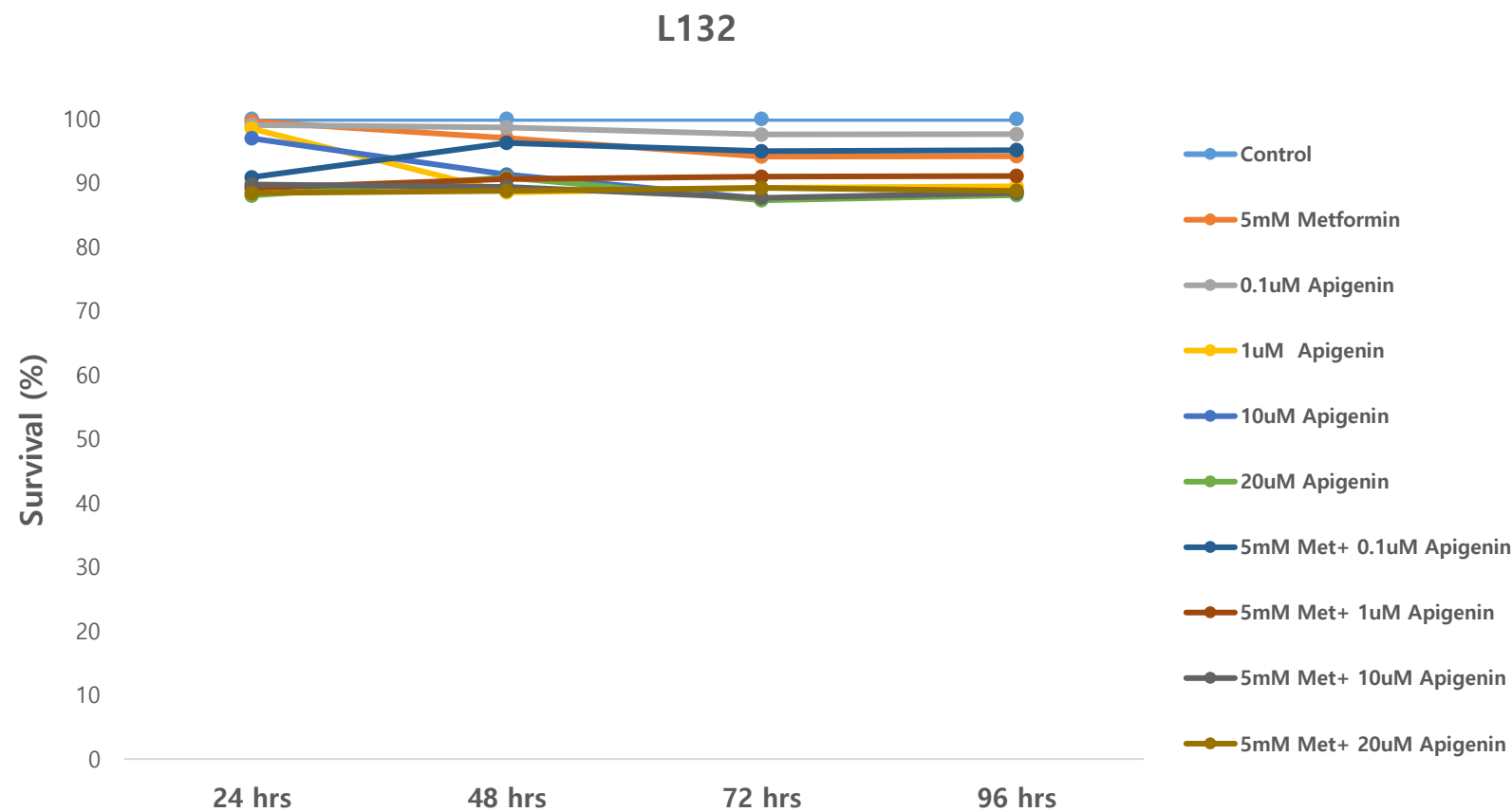
Figure 7E Animal study high dose raw data
(tumor weight)

	Control	Metformin 125 mg/kg	Apigenin 40 mg/kg	Met 125 + Api 40 mg/kg
1	712	799	78	98
2	480	476	0	0
3	363	232	7	11
4	315	0	0	0
5	665	576	408	138
6	318	116	402	30
7	355	0	0	0
8	218	0	0	0
AVERAGE	428.25	274.88	111.88	34.63
SE	62.40	108.53	64.65	18.93

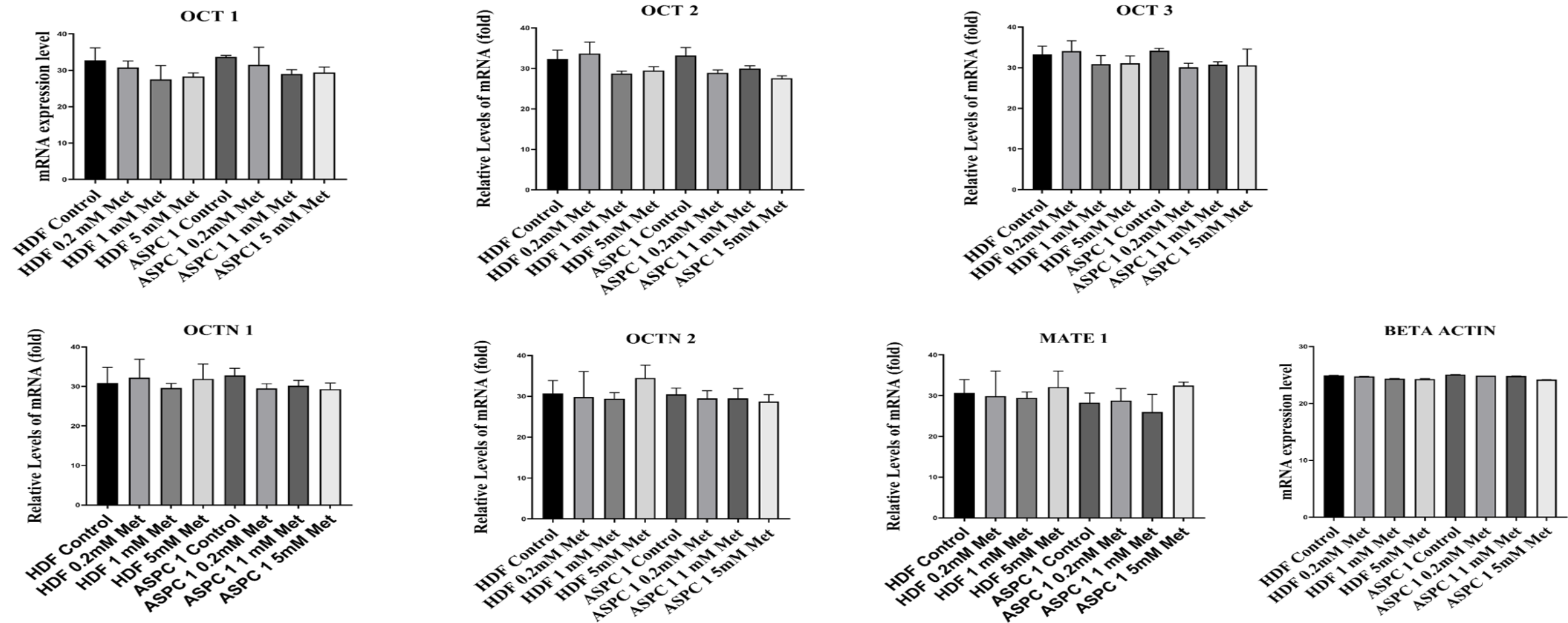
Cellular ROS level in L132 cells (normal human epithelial cells , human lung origin)
treated with metformin, apigenin and metformin/apigenin.



MTT Assay in L132 cells (normal human epithelial cells , human lung origin)
treated with metformin, apigenin and metformin/apigenin



Analysis of mRNA levels(OCT1,2,3, OCTN 1 and 2 and MATE1) by Real time RT-qPCR

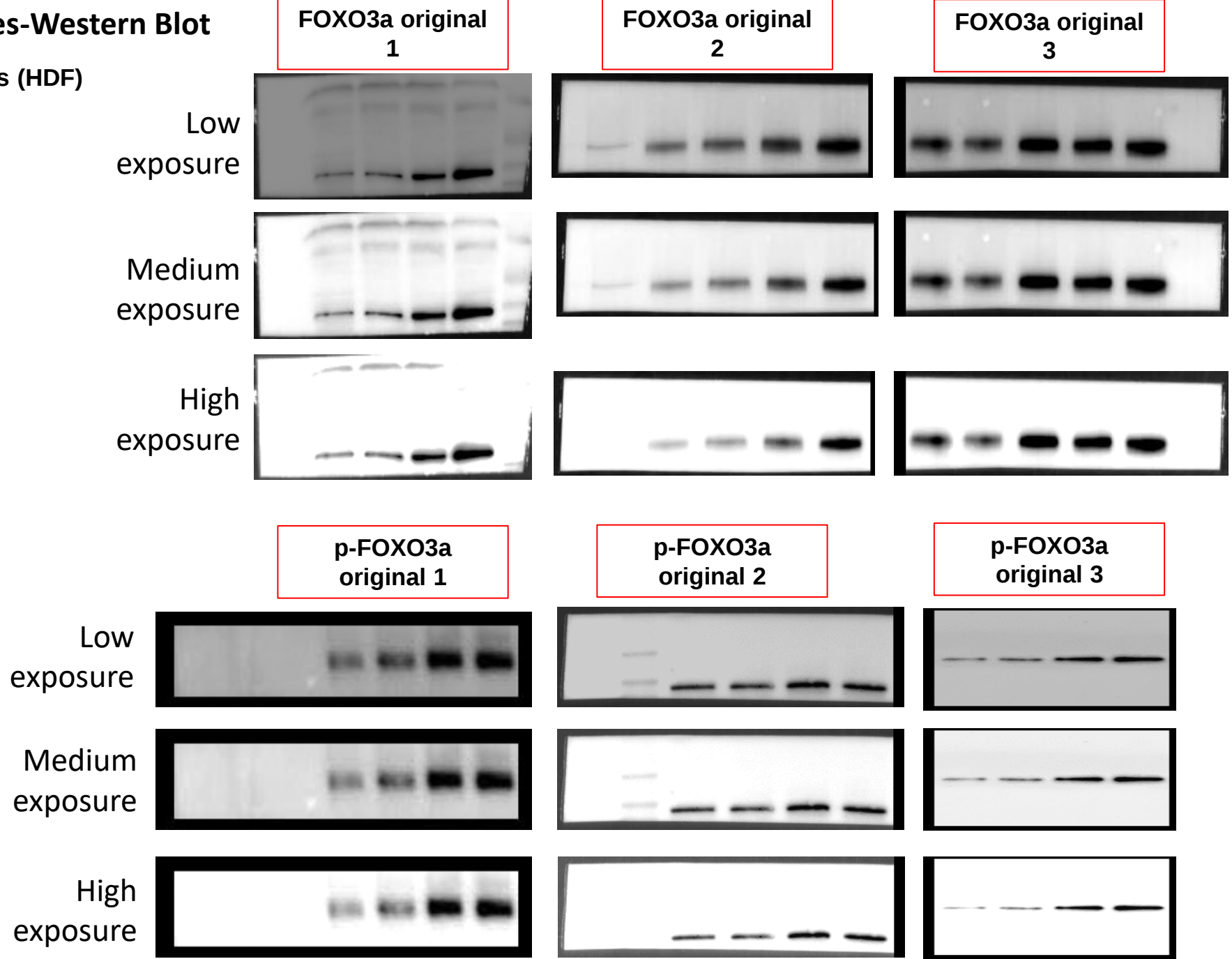
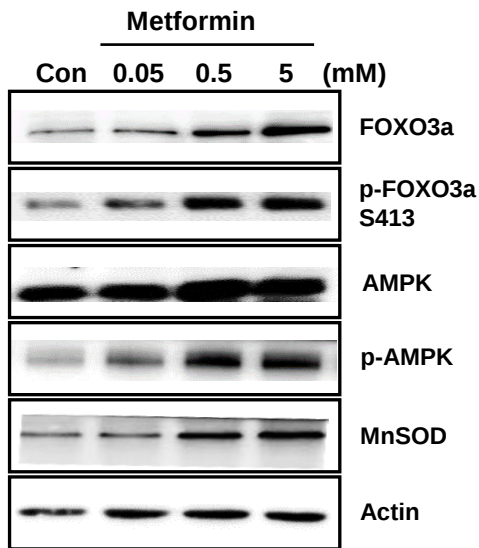


HDF and AsPC-1 cells were treated with different concentrations of metformin (0.2, 1 and 5 mM) for 24 hr and mRNA was isolated. 0.5 µg of mRNA was used for real time RT-qPCR.

Multiple Exposure Images-Western Blot

Fig. 2B western blot analysis (HDF)

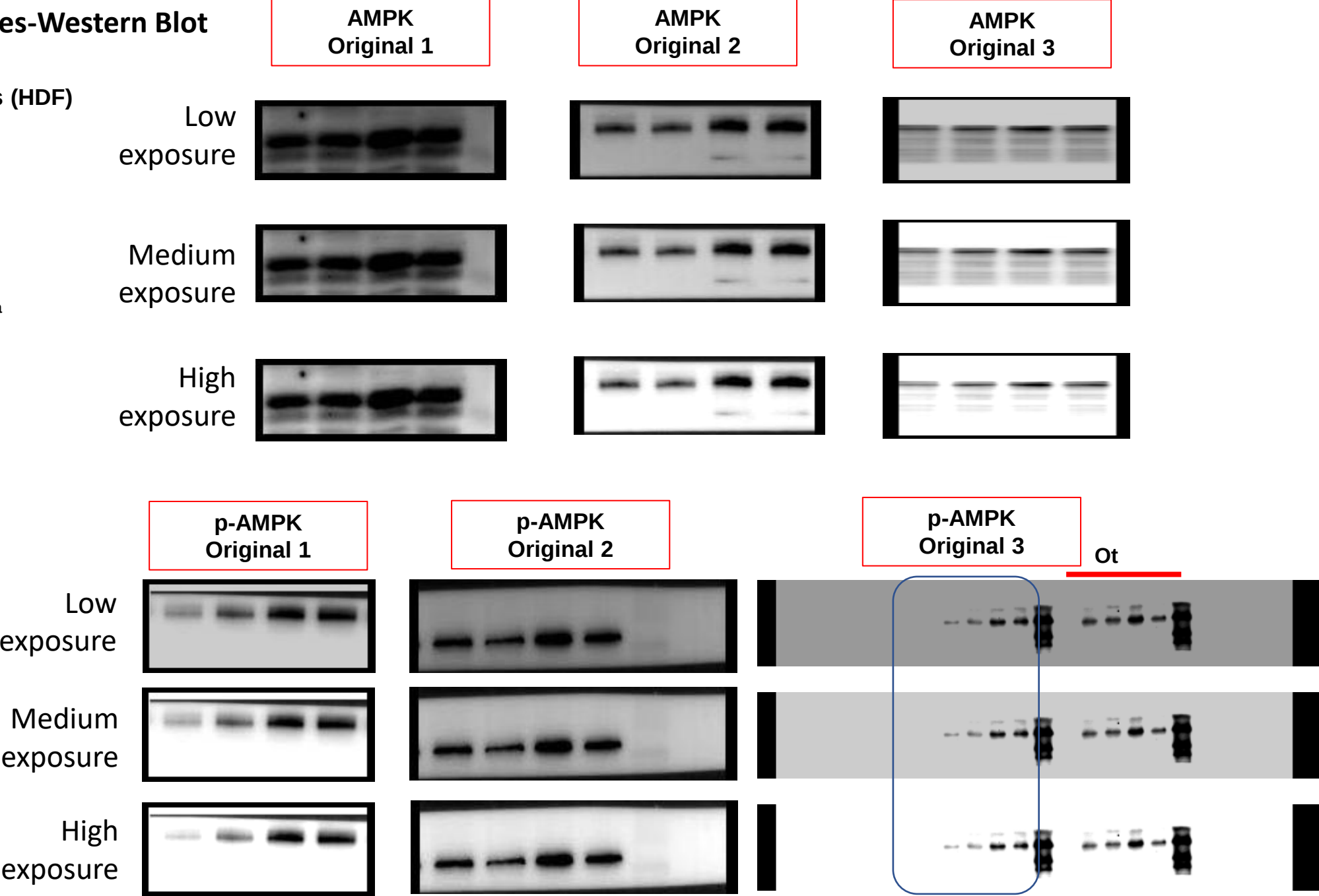
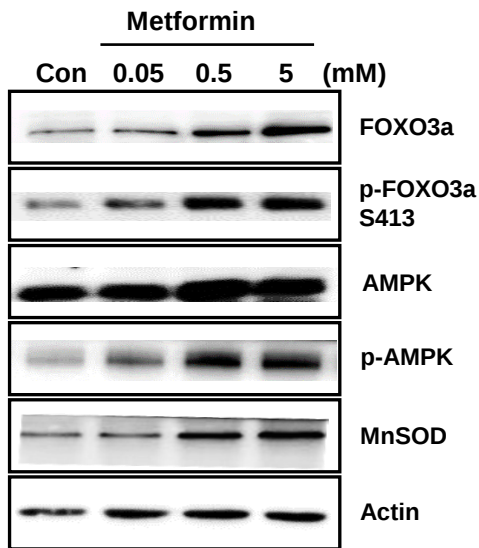
Ot: other sample



Multiple Exposure Images-Western Blot

Fig. 2B western blot analysis (HDF)

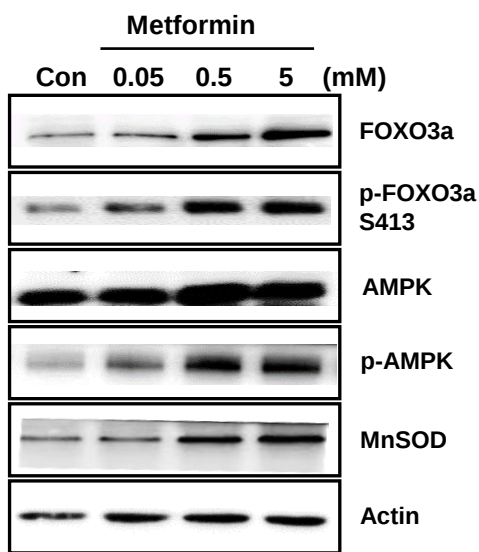
Ot: other sample



Multiple Exposure Images-Western Blot

Fig. 2B western blot analysis (HDF)

Ot: other sample



MnSOD original 1

MnSOD original 2

MnSOD original 3

Low exposure

Medium exposure

High exposure

Ot

Ot

Actin original 1

Actin original 2

Actin original 3

Ot

Ot

Low exposure

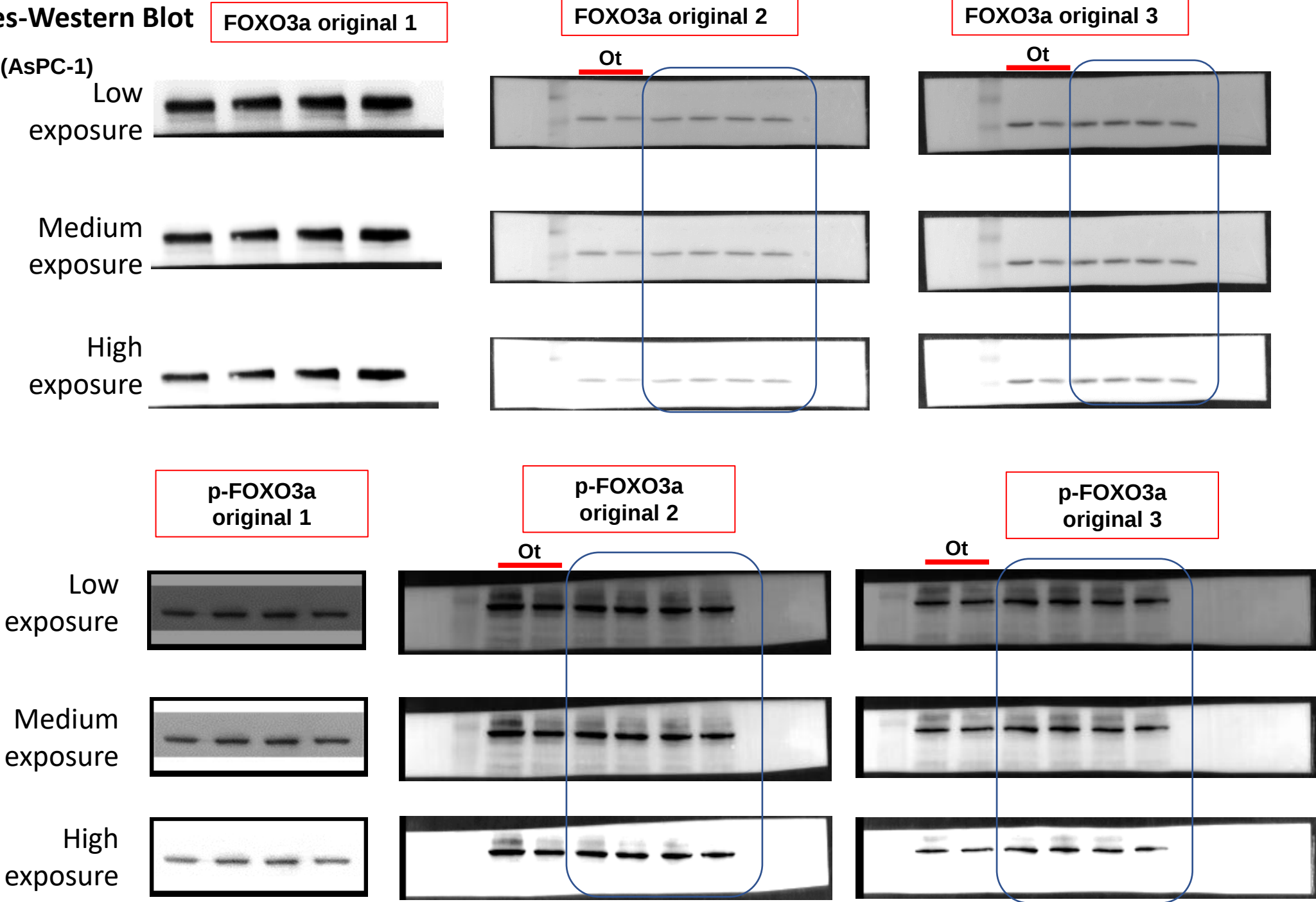
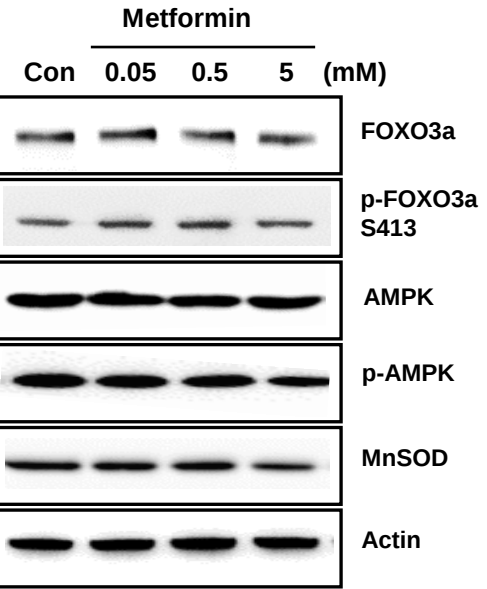
Medium exposure

High exposure

Multiple Exposure Images-Western Blot

Fig. 2B western blot analysis (AsPC-1)

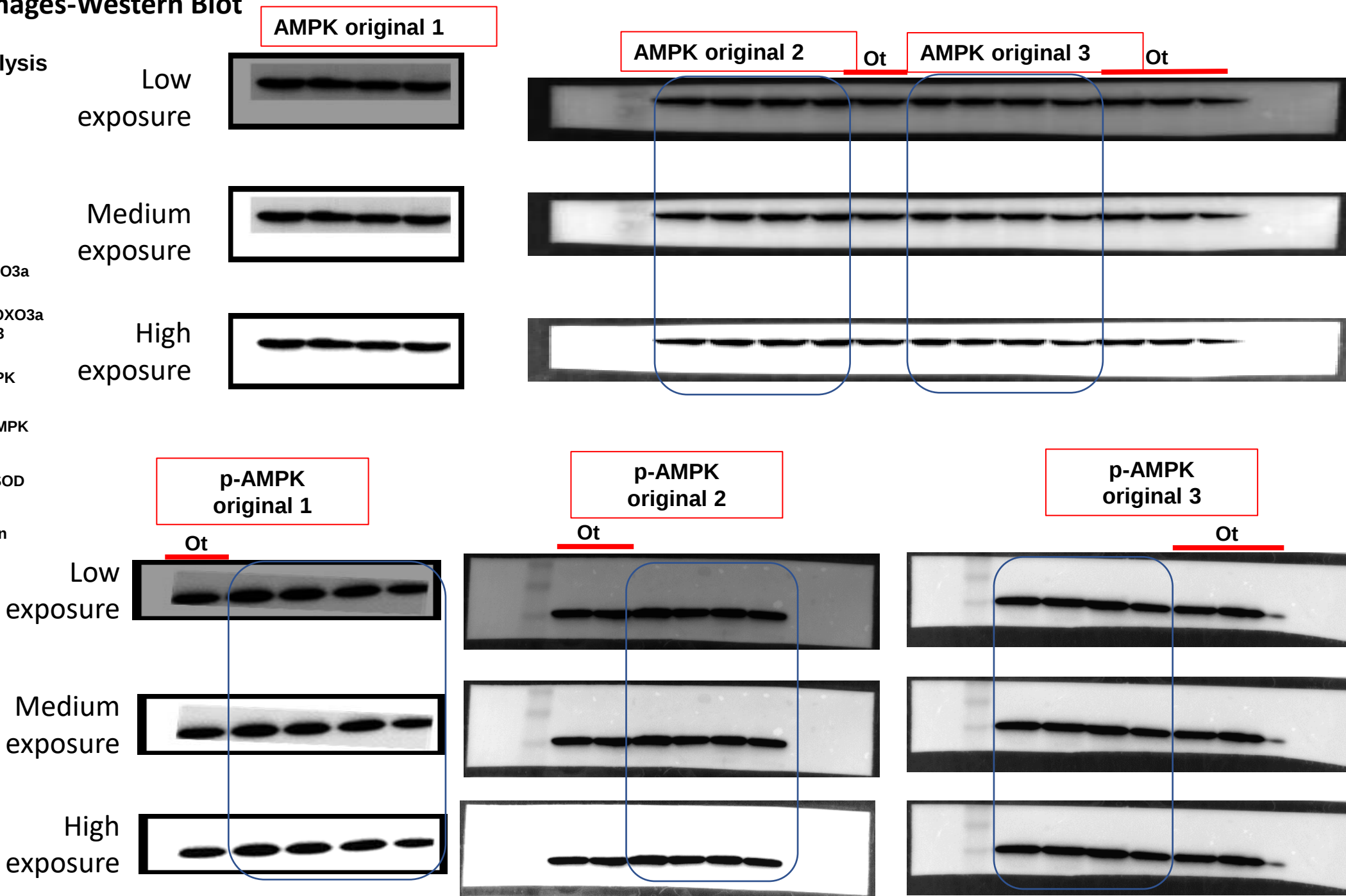
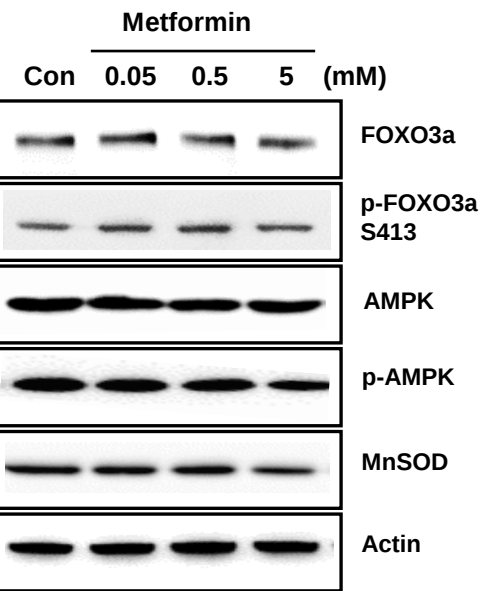
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Multiple Exposure Images-Western Blot

Fig. 2B western blot analysis (AsPC-1)

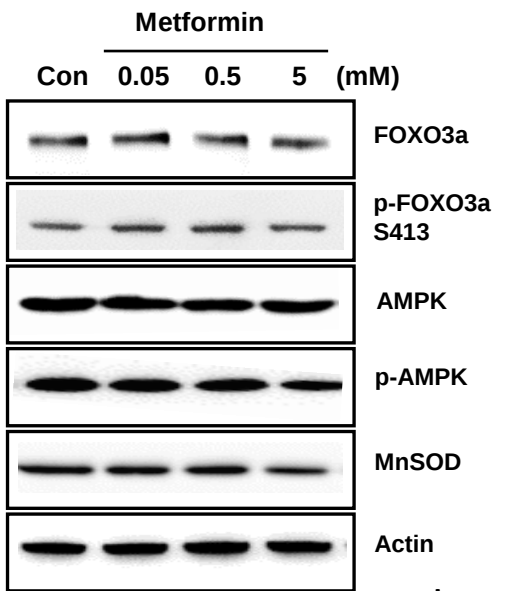
Ot: other sample



Multiple Exposure Images-Western Blot

Fig. 2B western blot analysis (AsPC-1)

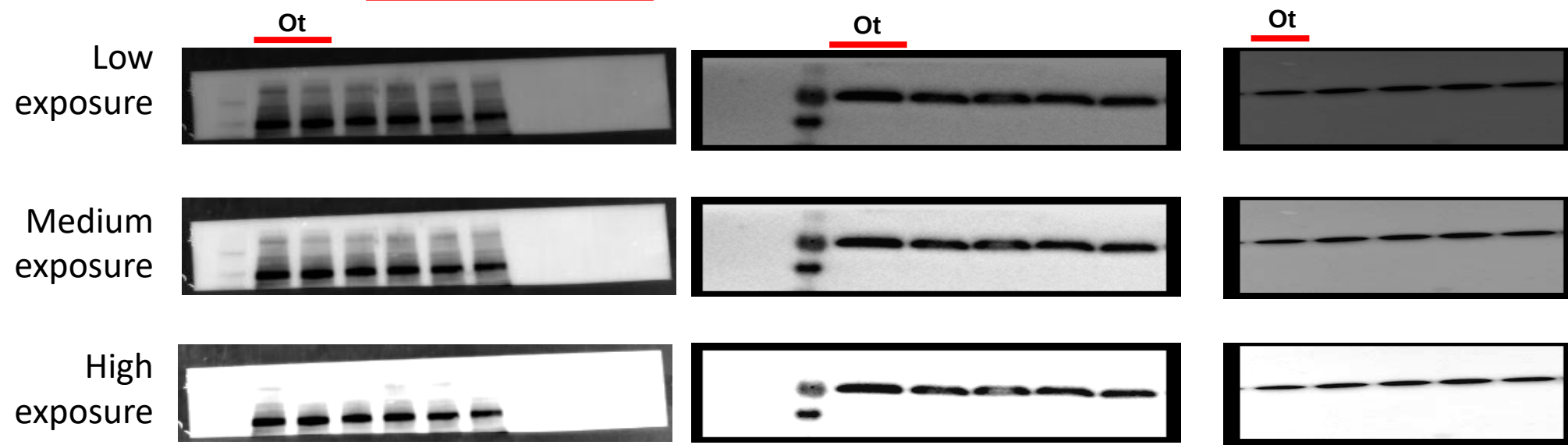
Ot: other sample



MnSOD original 1

MnSOD original 2

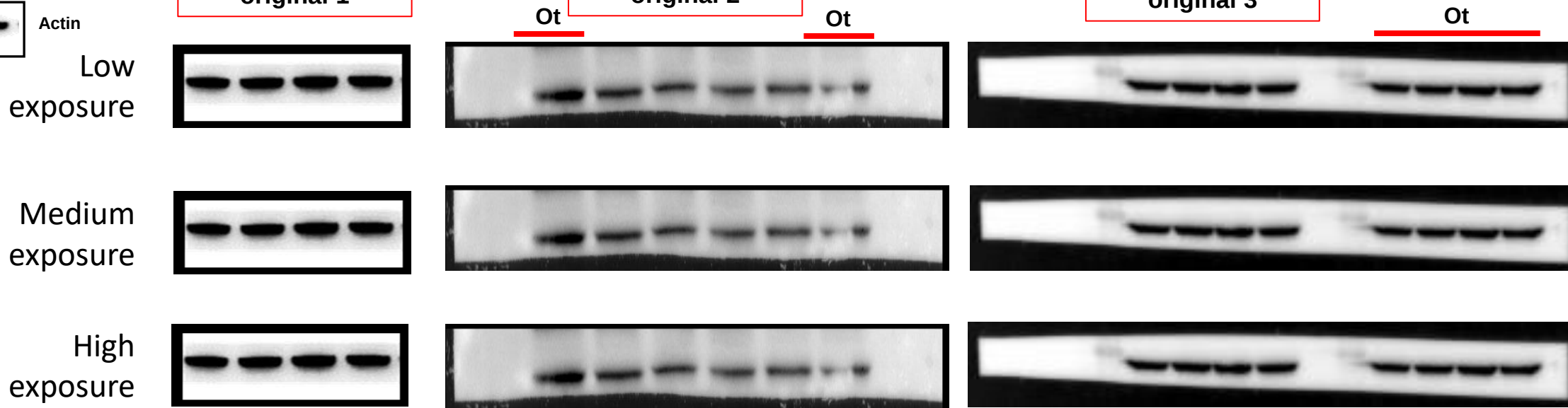
MnSOD original 3



Actin original 1

Actin original 2

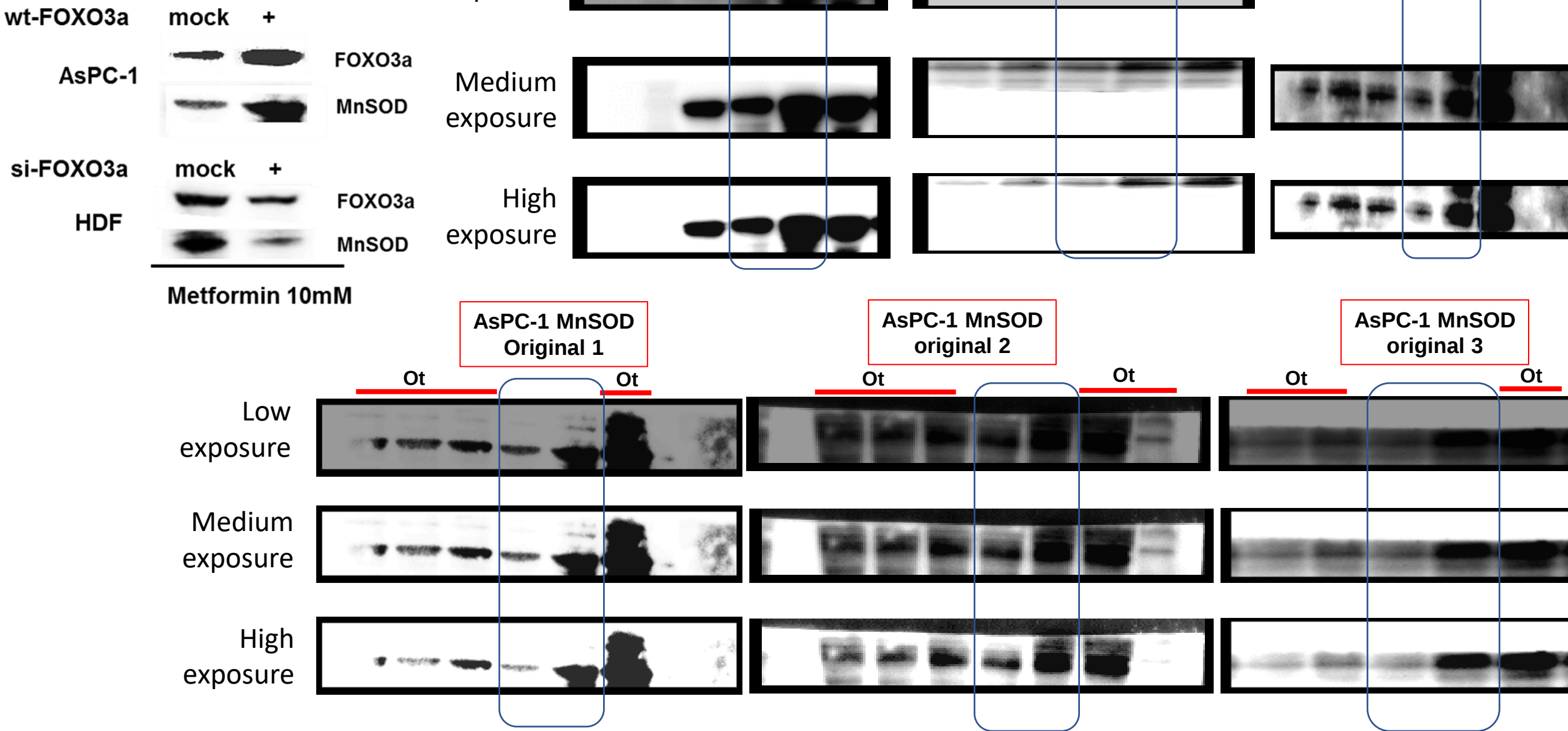
Actin original 3



Multiple Exposure Images-Western Blot

Fig. 3B western blot analysis (AsPC-1 and HDF)

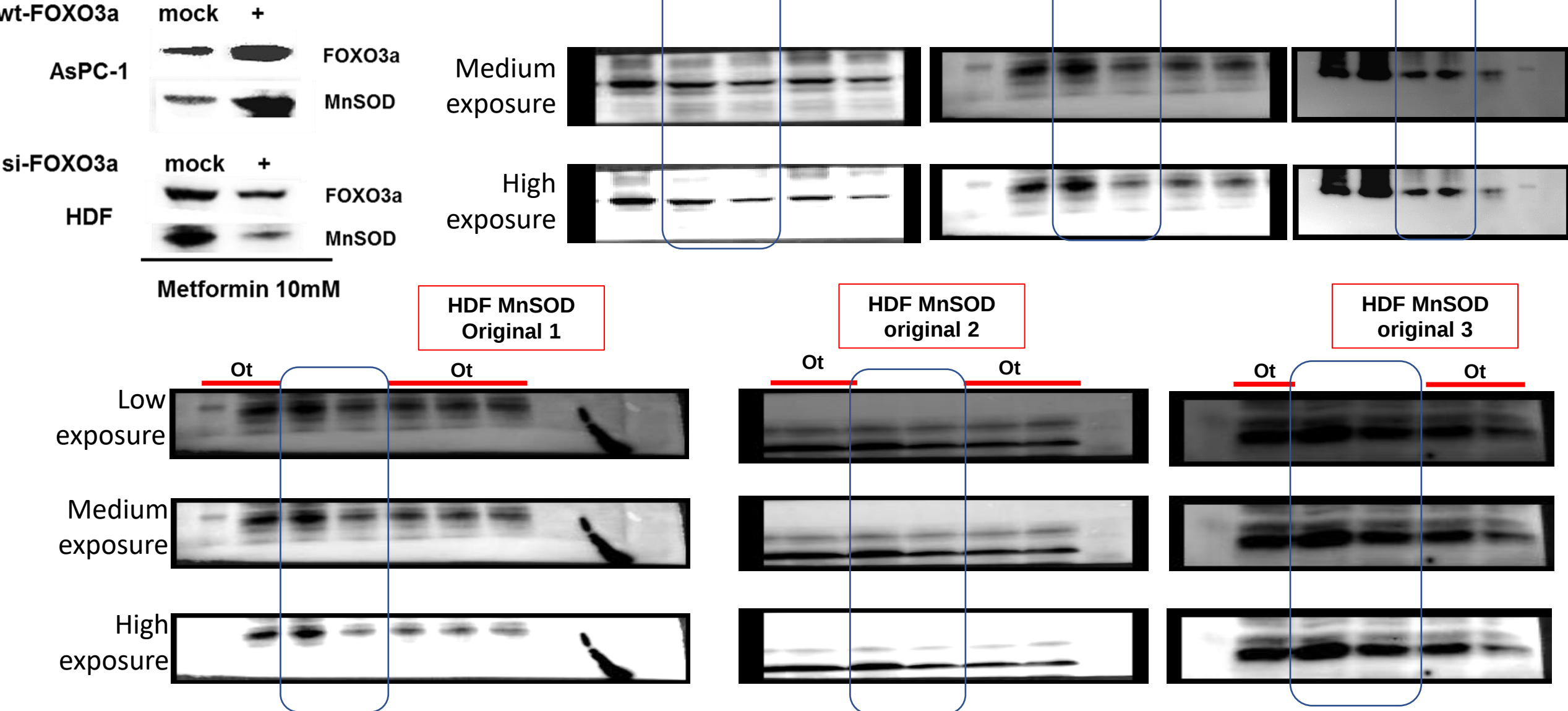
Ot: other sample



Multiple Exposure Images-Western Blot

Fig. 3B western blot analysis (AsPC-1 and HDF)

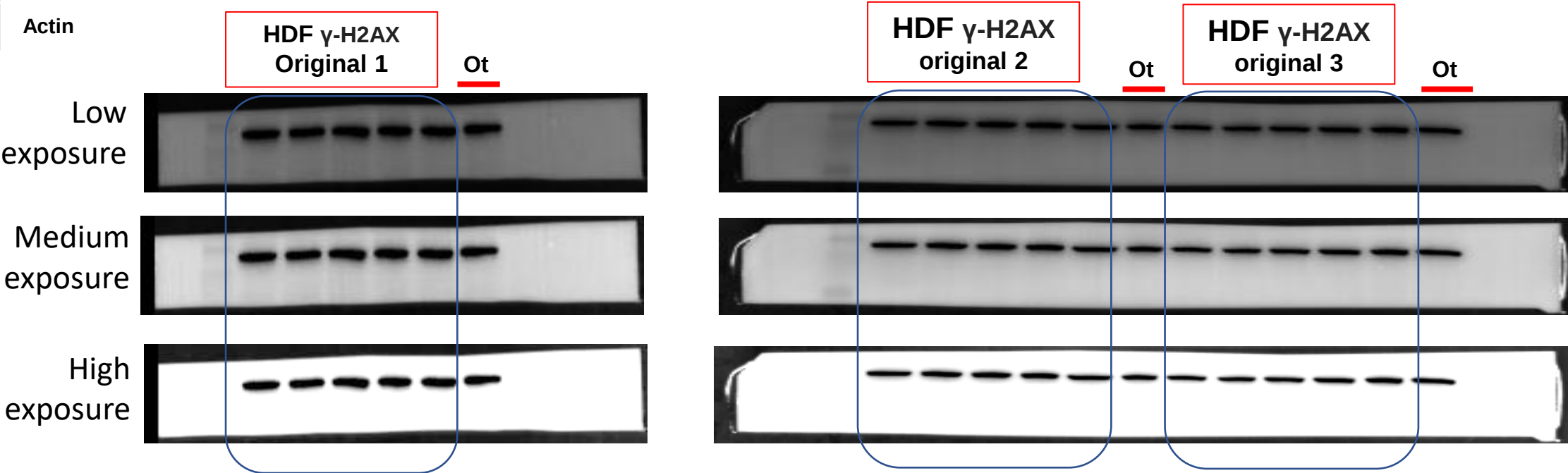
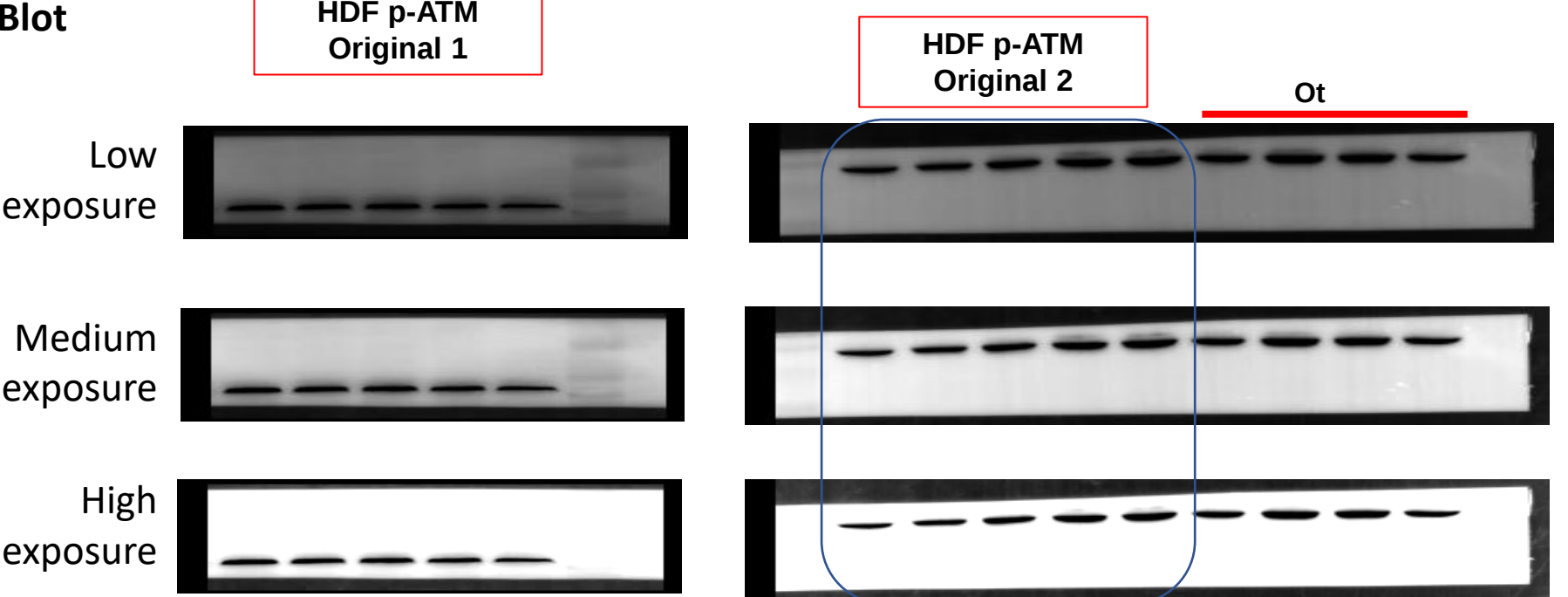
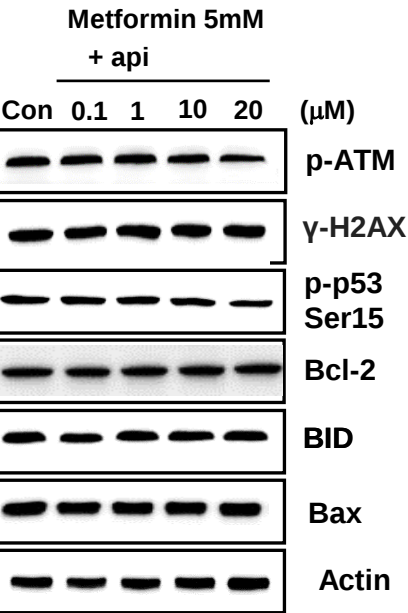
Ot: other sample



Multiple Exposure Images-Western Blot

Fig.5 A western blot analysis (HDF)

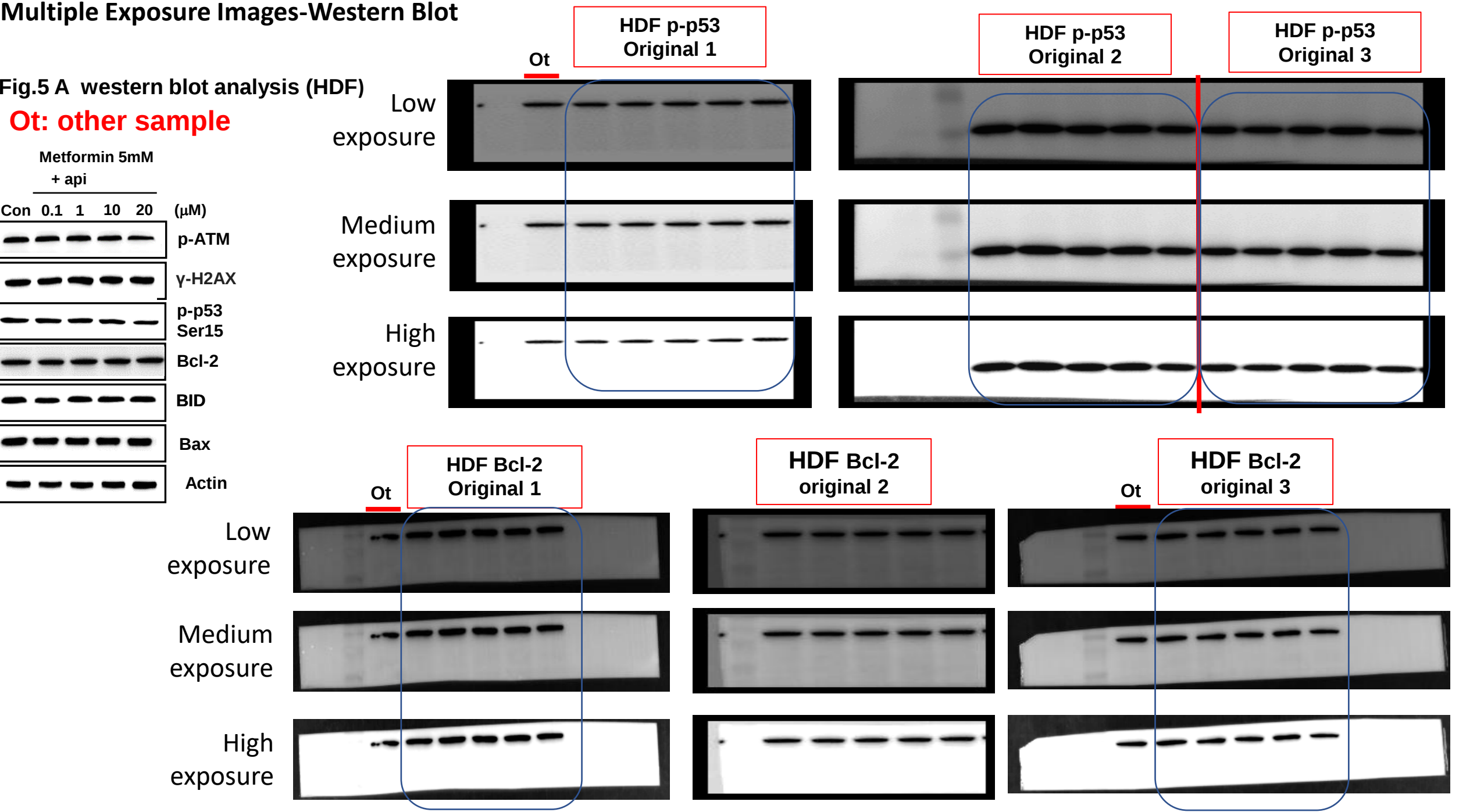
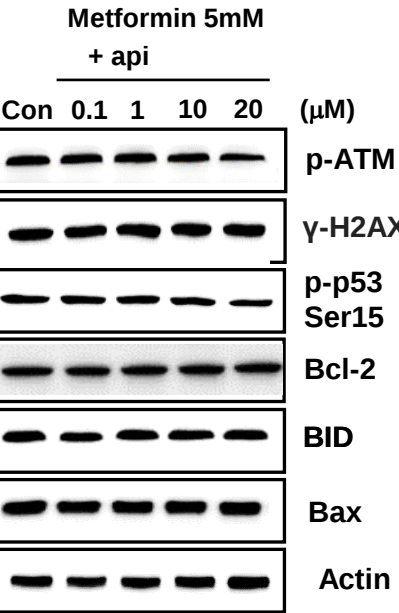
Ot: other sample



Multiple Exposure Images-Western Blot

Fig.5 A western blot analysis (HDF)

Ot: other sample



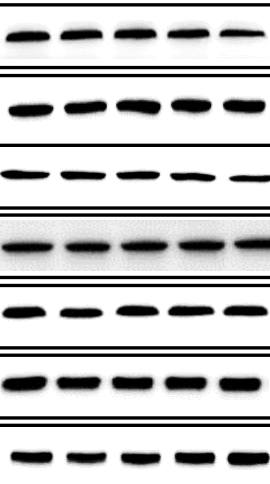
Multiple Exposure Images-Western Blot

Fig.5 A western blot analysis (HDF)

Ot: other sample

Metformin 5mM
+ api

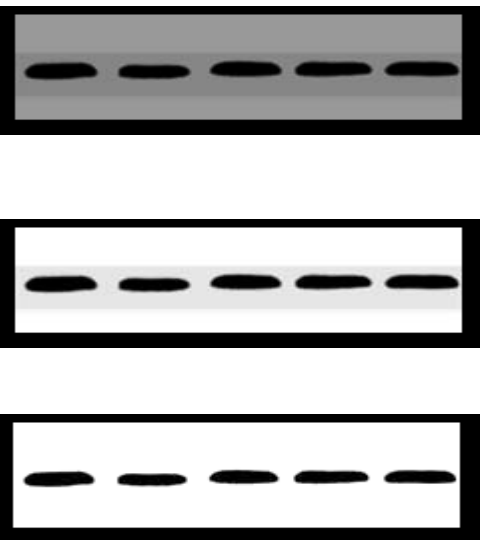
Con 0.1 1 10 20 (μM)



p-ATM
γ-H2AX
p-p53
Ser15
Bcl-2
BID
Bax
Actin

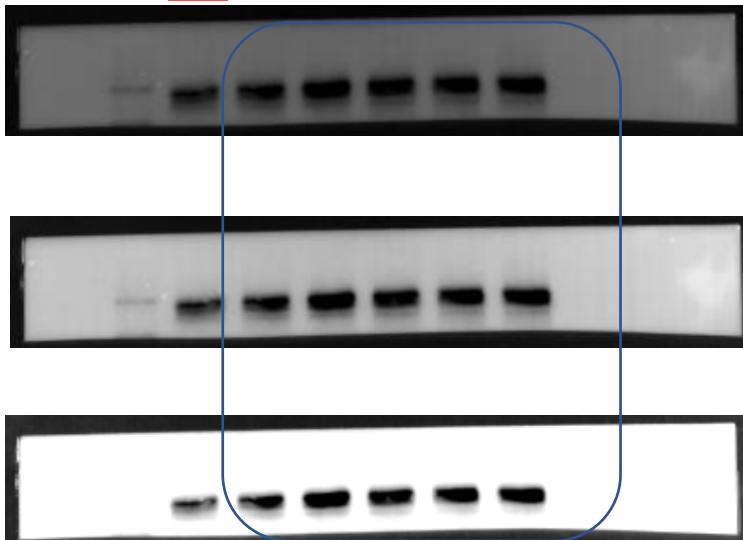
Low exposure
Medium exposure
High exposure

HDF BID
Original 1



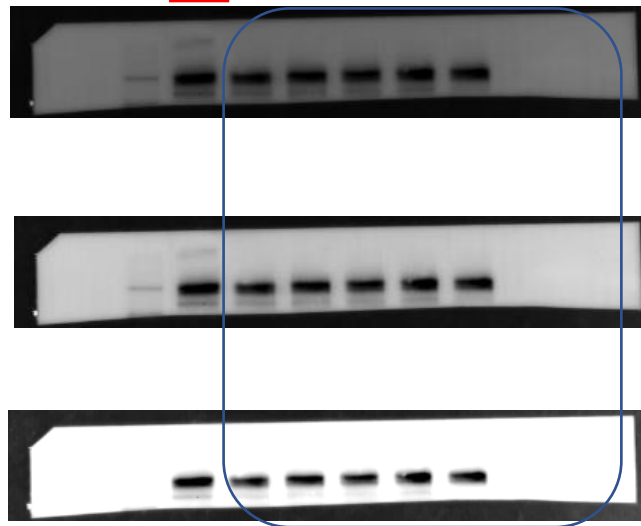
HDF BID
Original 2

Ot



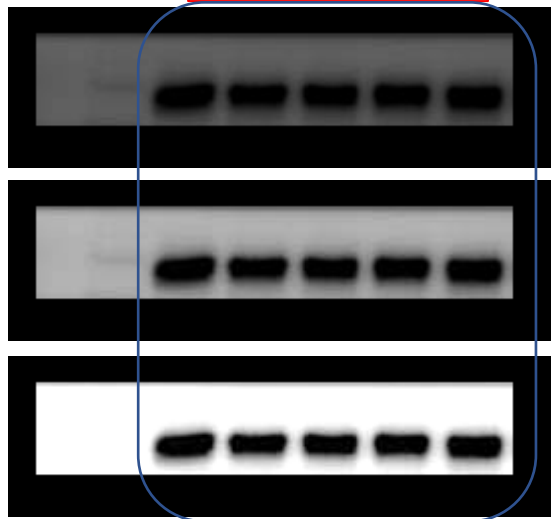
HDF BID
Original 3

Ot



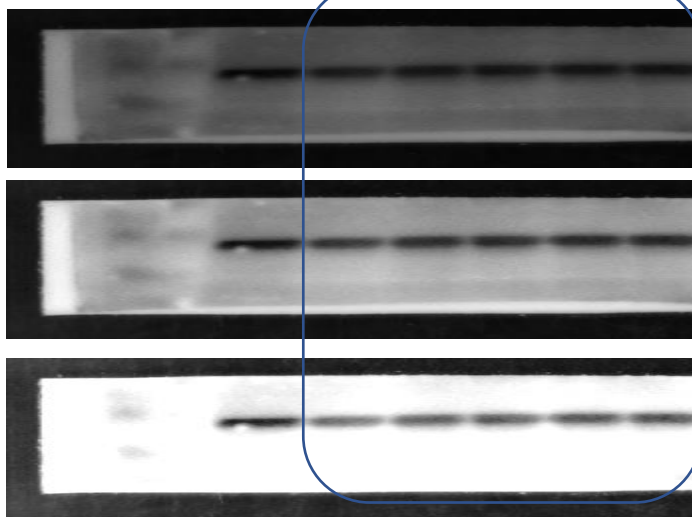
HDF BAX
Original 1

Ot



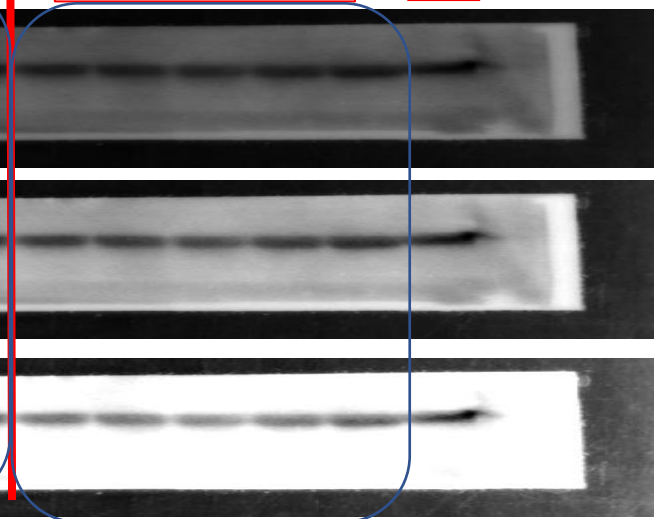
HDF BAX
original 2

Ot



HDF BAX
original 3

Ot

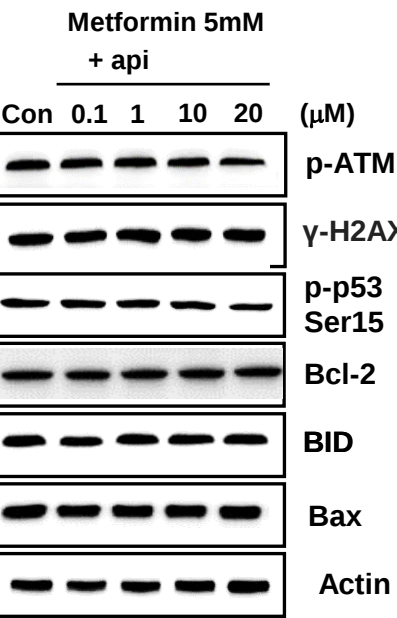


Low exposure
Medium exposure
High exposure

Multiple Exposure Images-Western Blot

Fig.5 A western blot analysis (HDF)

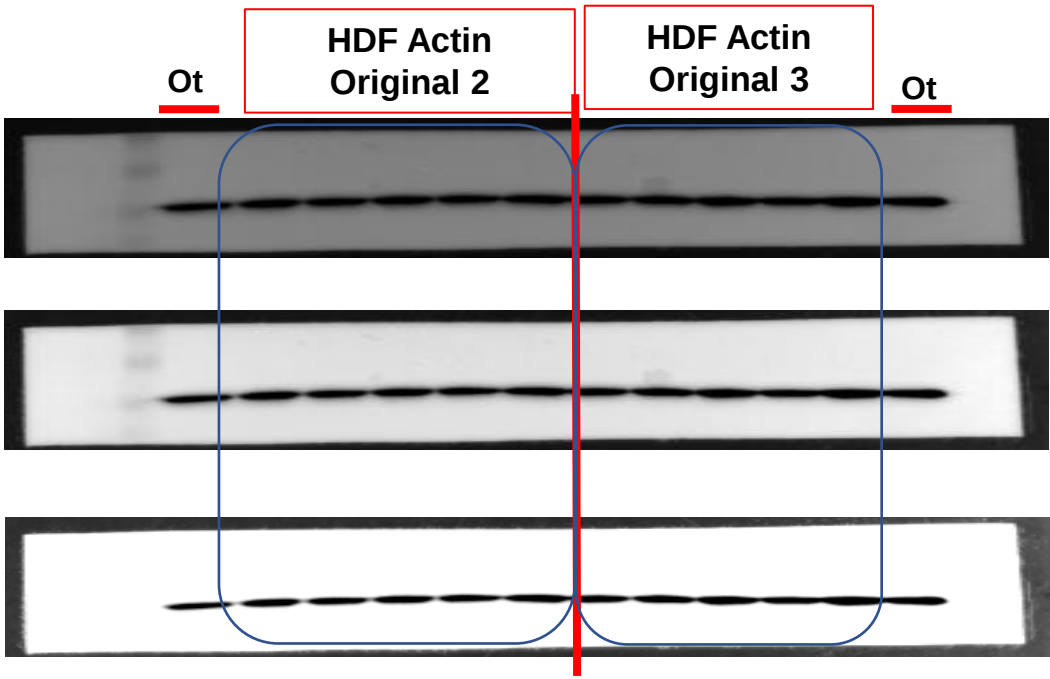
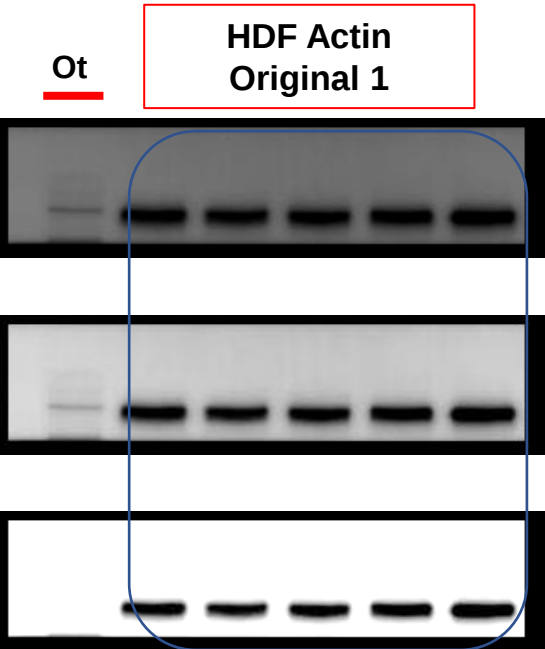
Ot: other sample



Low exposure

Medium exposure

High exposure

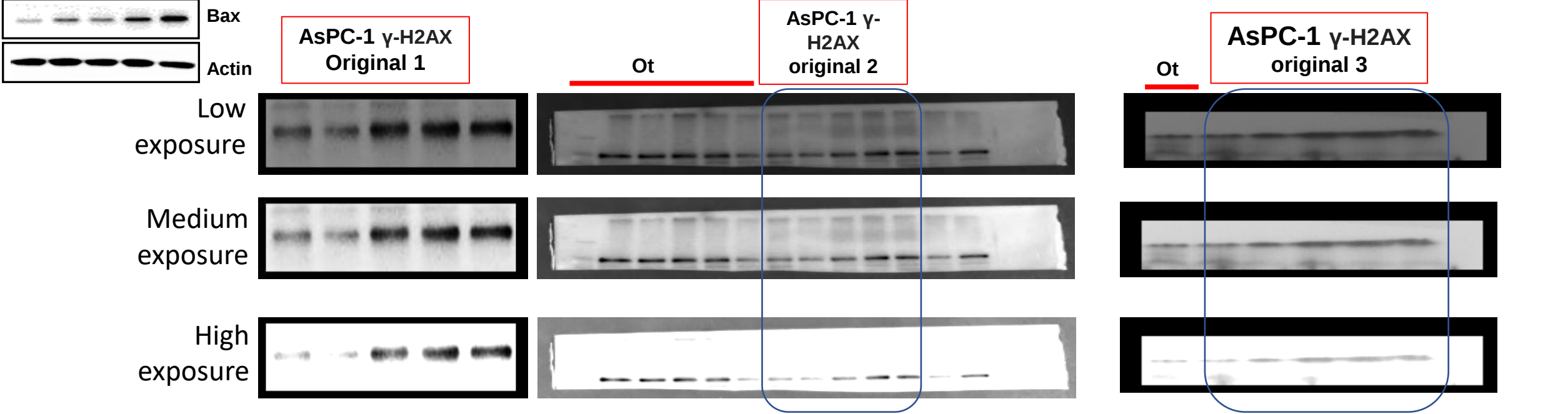
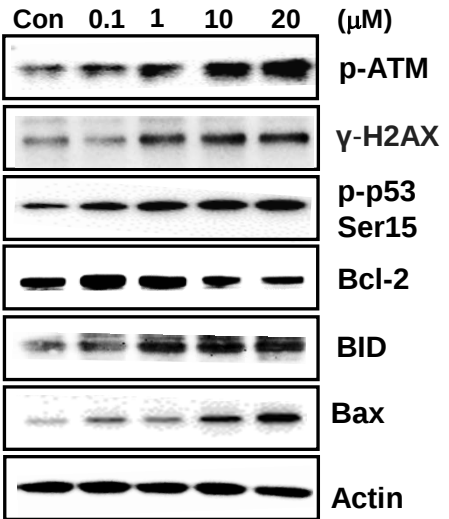


Multiple Exposure Images-Western Blot

Fig.5 A western blot analysis (AsPC-1)

Ot: other sample

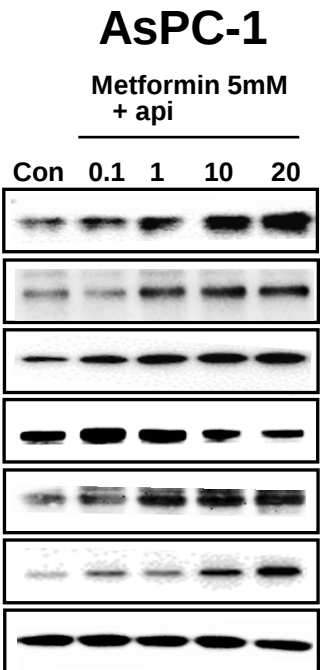
AsPC-1
Metformin 5mM
+ api



Multiple Exposure Images-Western Blot

Fig.5 A western blot analysis (AsPC-1)

Ot: other sample



Low exposure

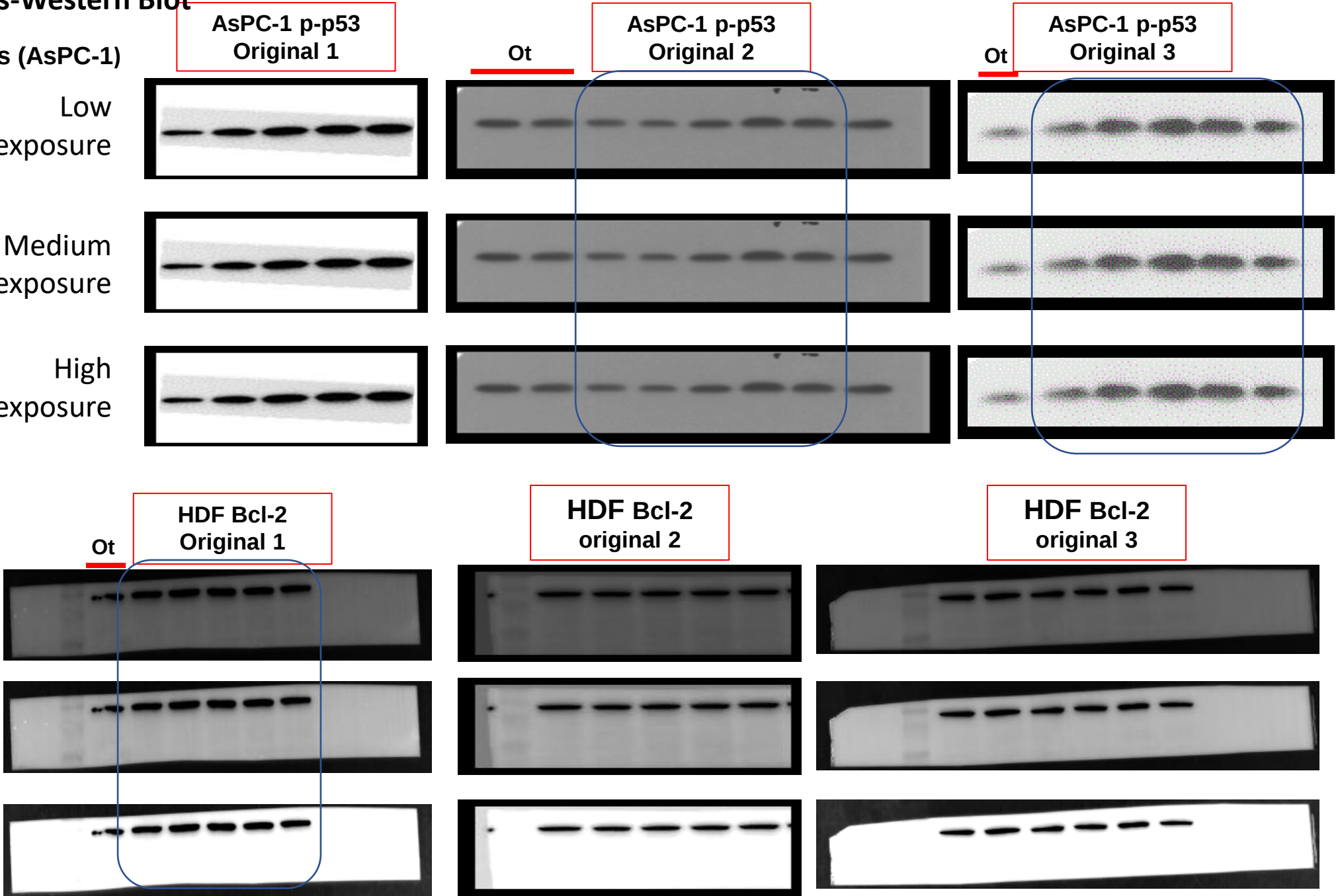
Medium exposure

High exposure

Low exposure

Medium exposure

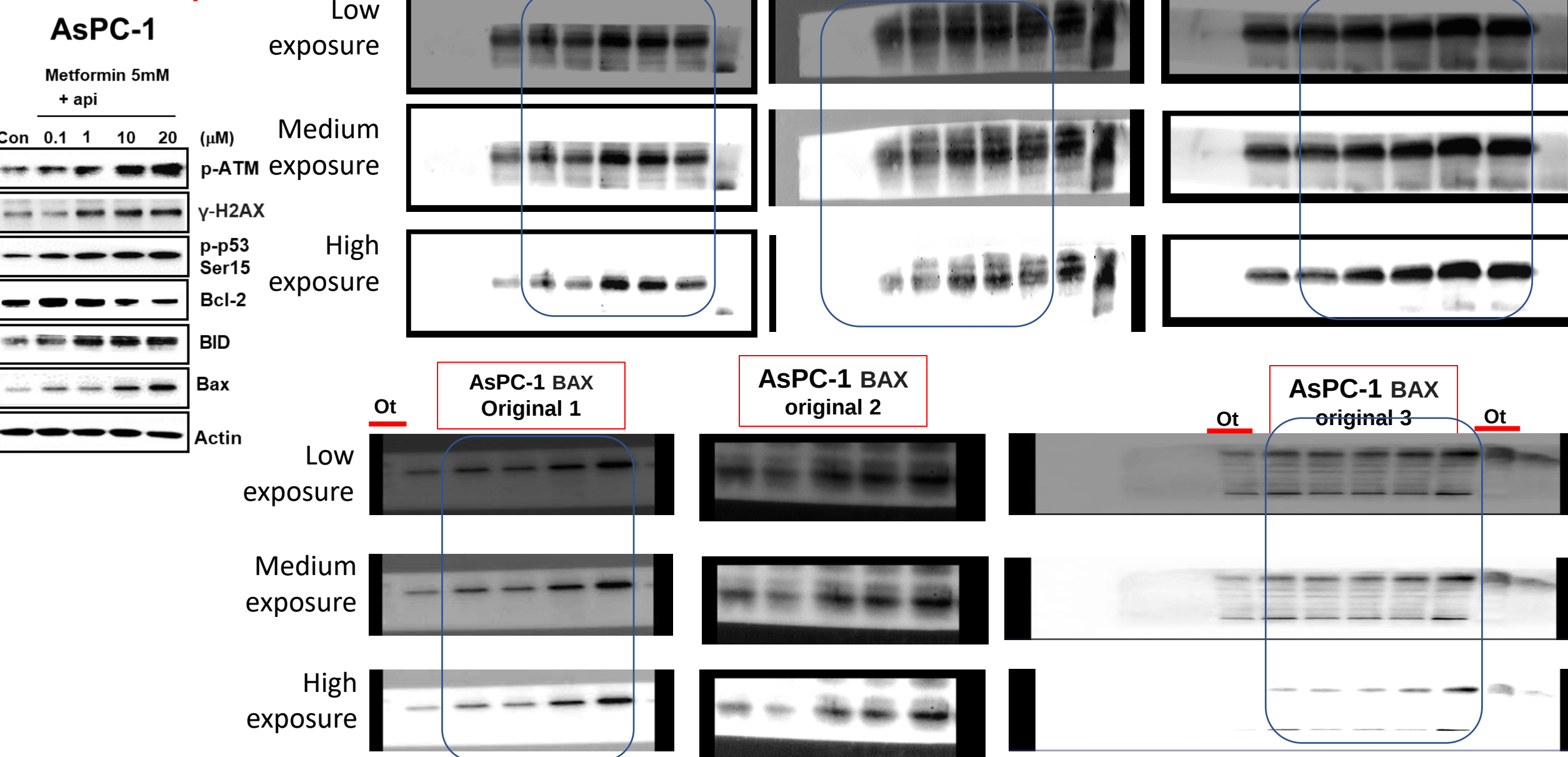
High exposure



Multiple Exposure Images-Western Blot

Fig.5 A western blot analysis(AsPC-1)

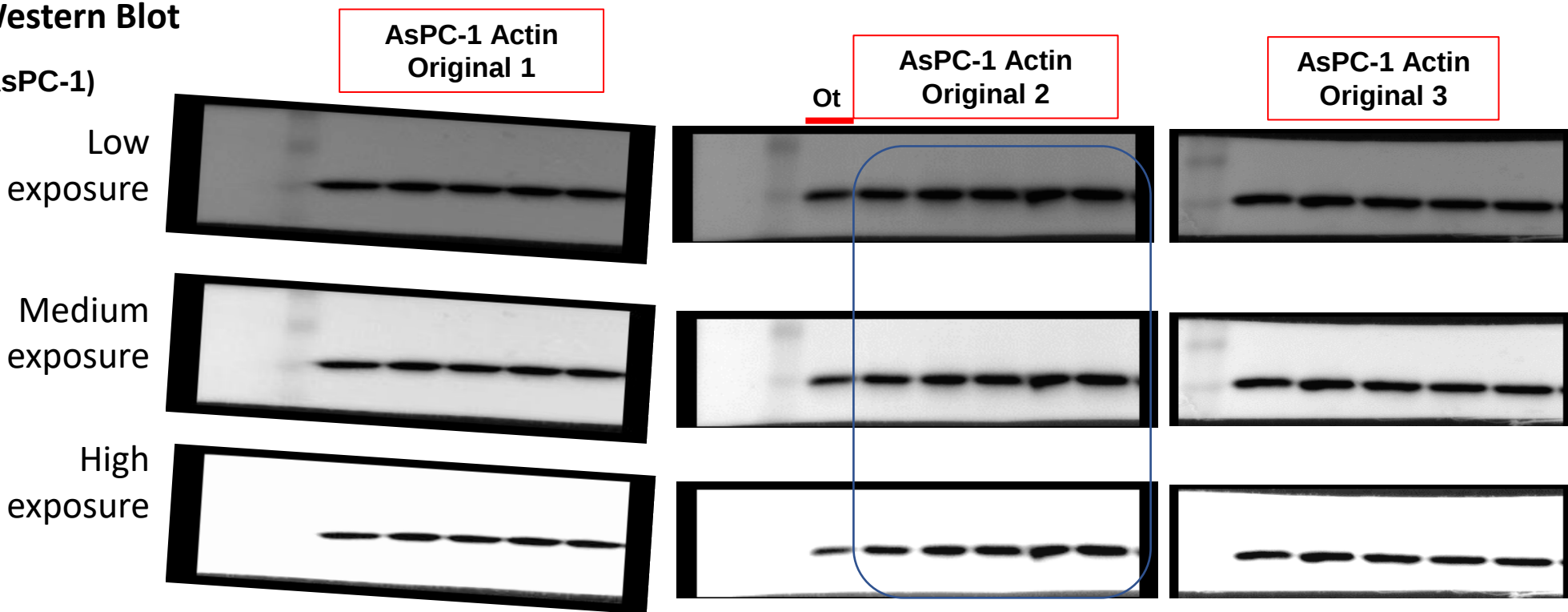
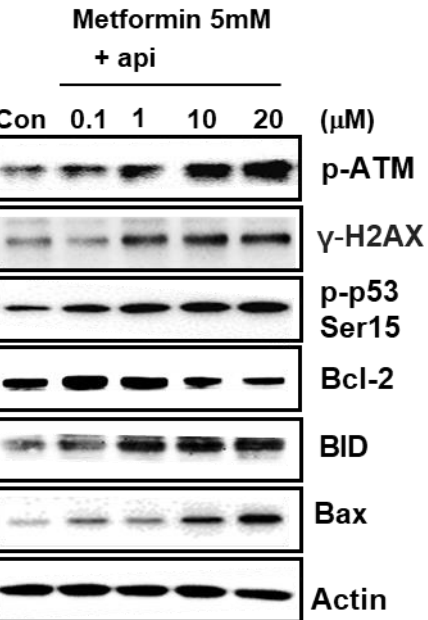
Ot: other sample



Multiple Exposure Images-Western Blot

Fig.5 A western blot analysis (AsPC-1)

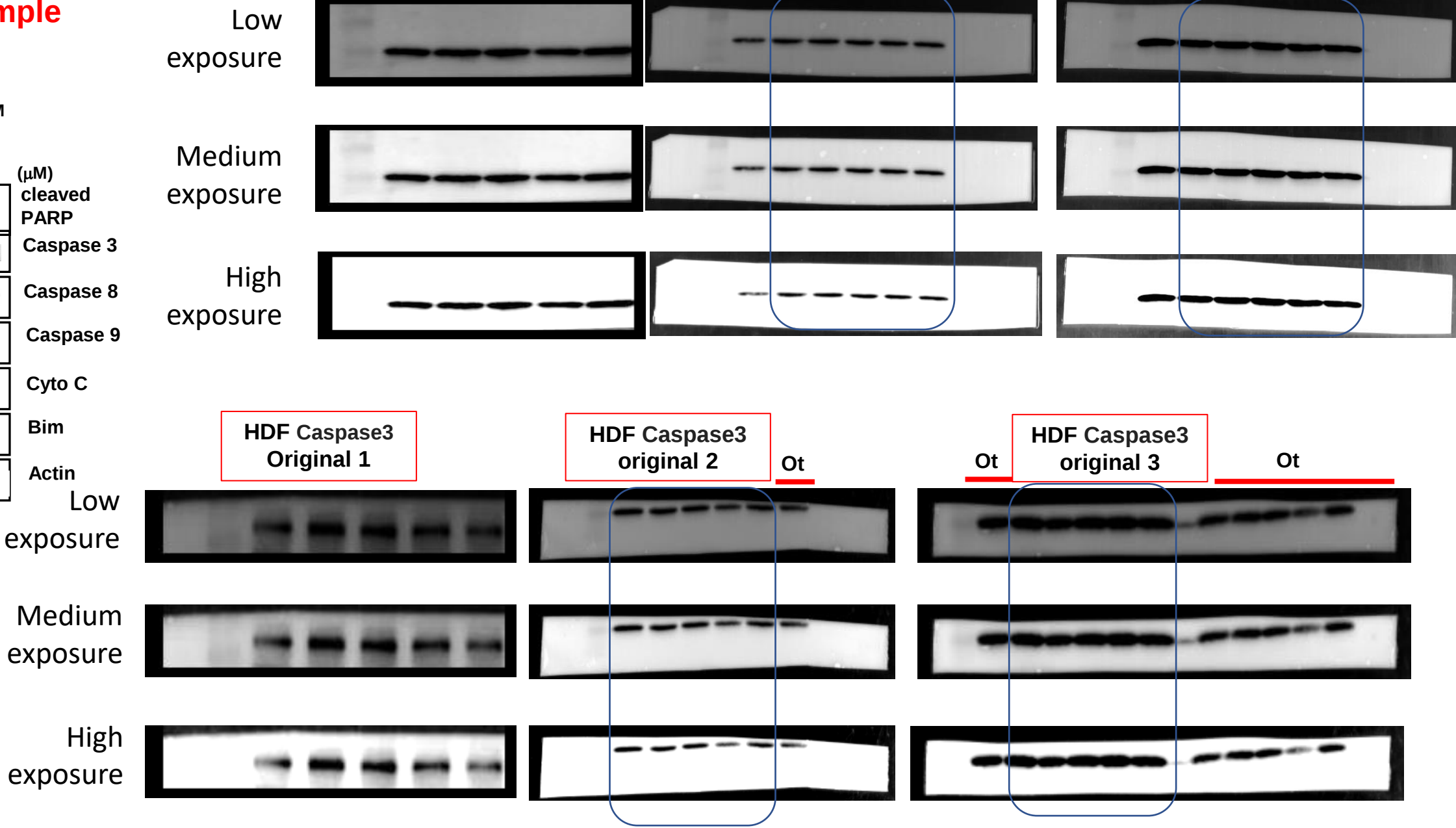
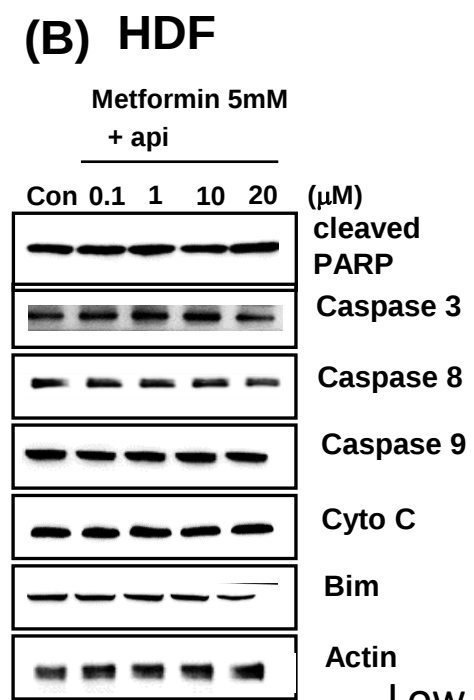
Ot: other sample
AsPC-1



Multiple Exposure Images-Western Blot

Fig.5 B western blot analysis (HDF)

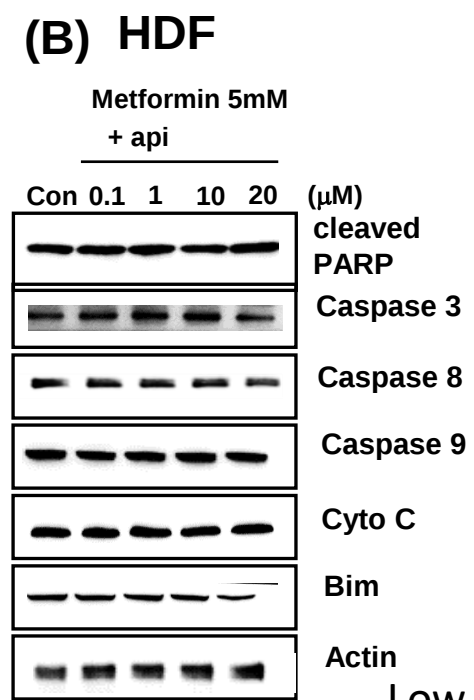
Ot: other sample



Multiple Exposure Images-Western Blot

Fig.5 B western blot analysis (HDF)

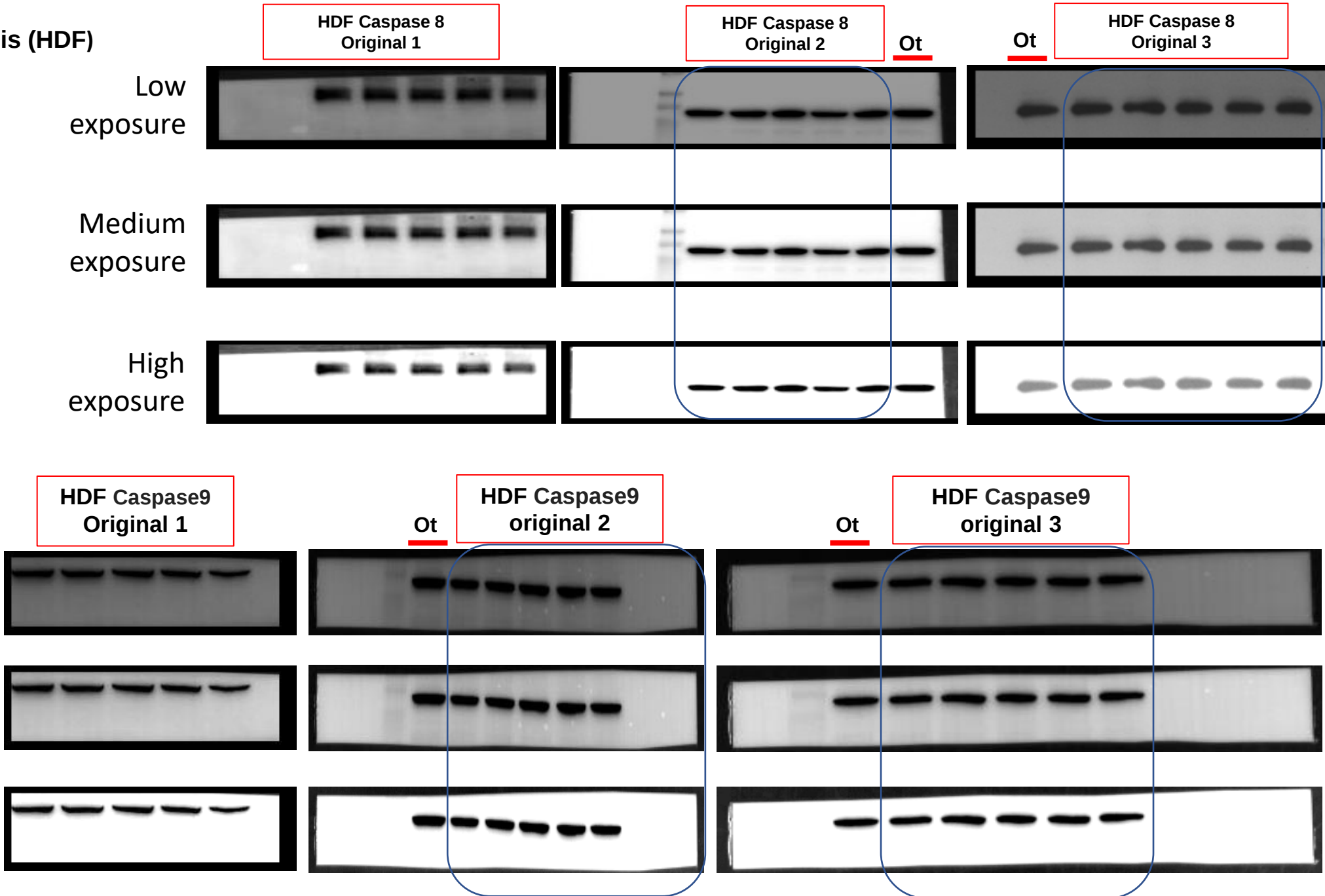
Ot: other sample



Low exposure

Medium exposure

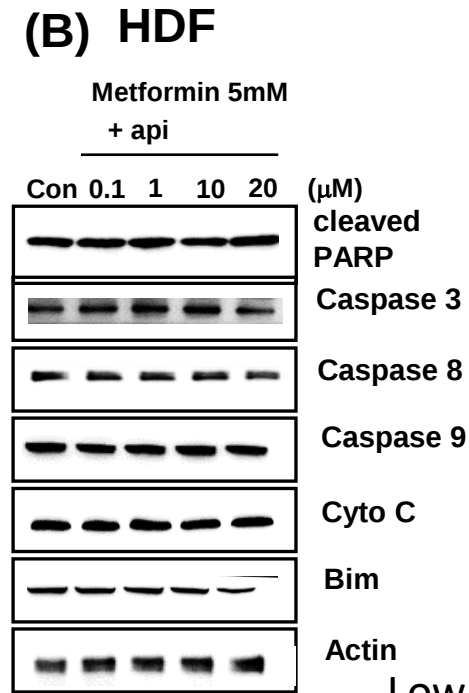
High exposure



Multiple Exposure Images-Western Blot

Fig.5 B western blot analysis (HDF)

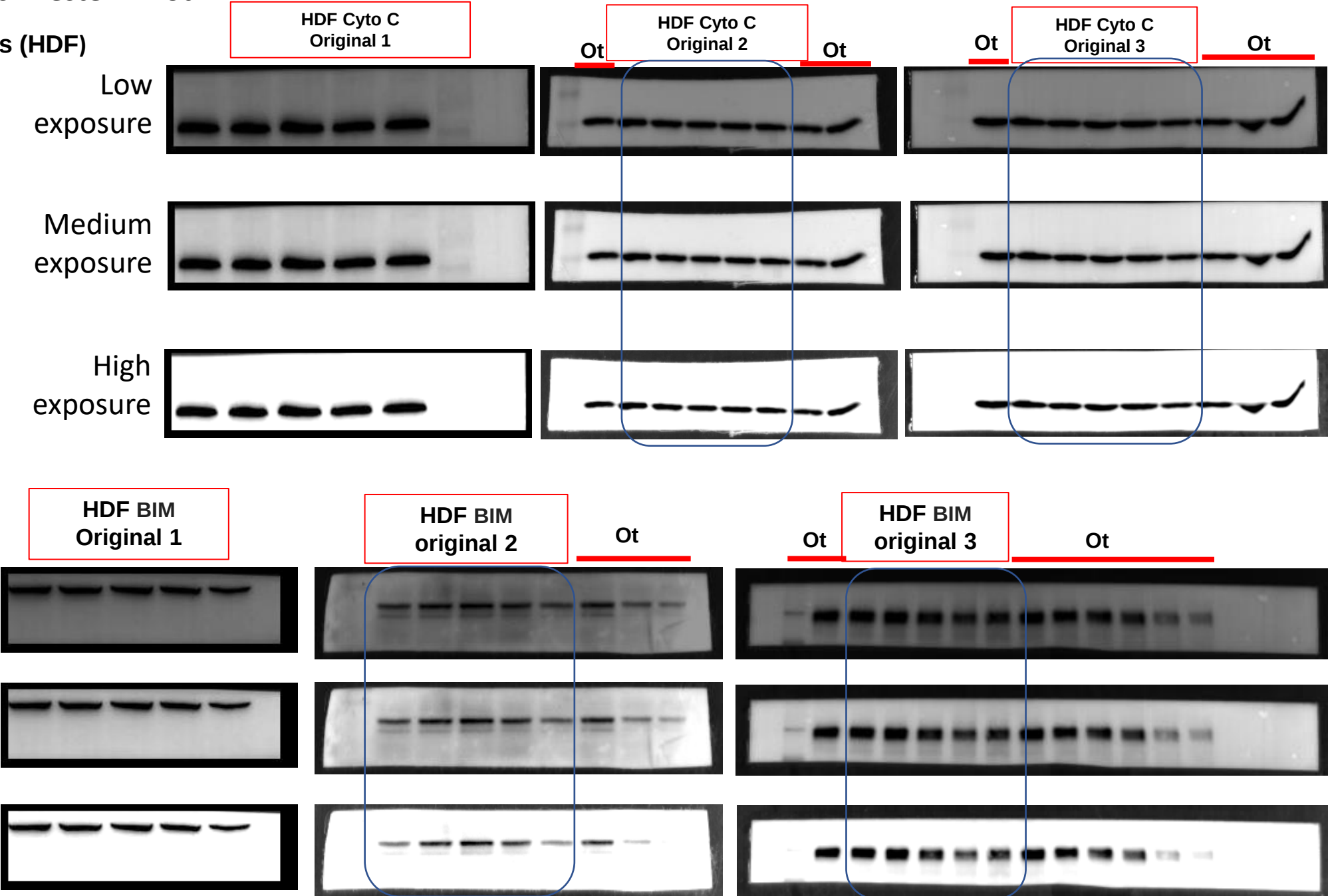
Ot: other sample



Low exposure

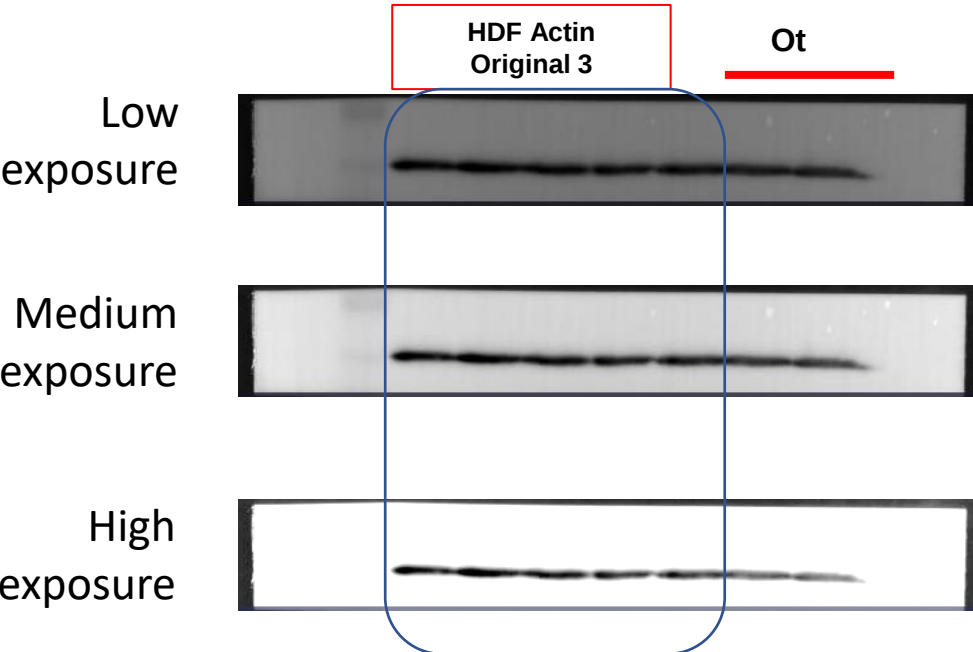
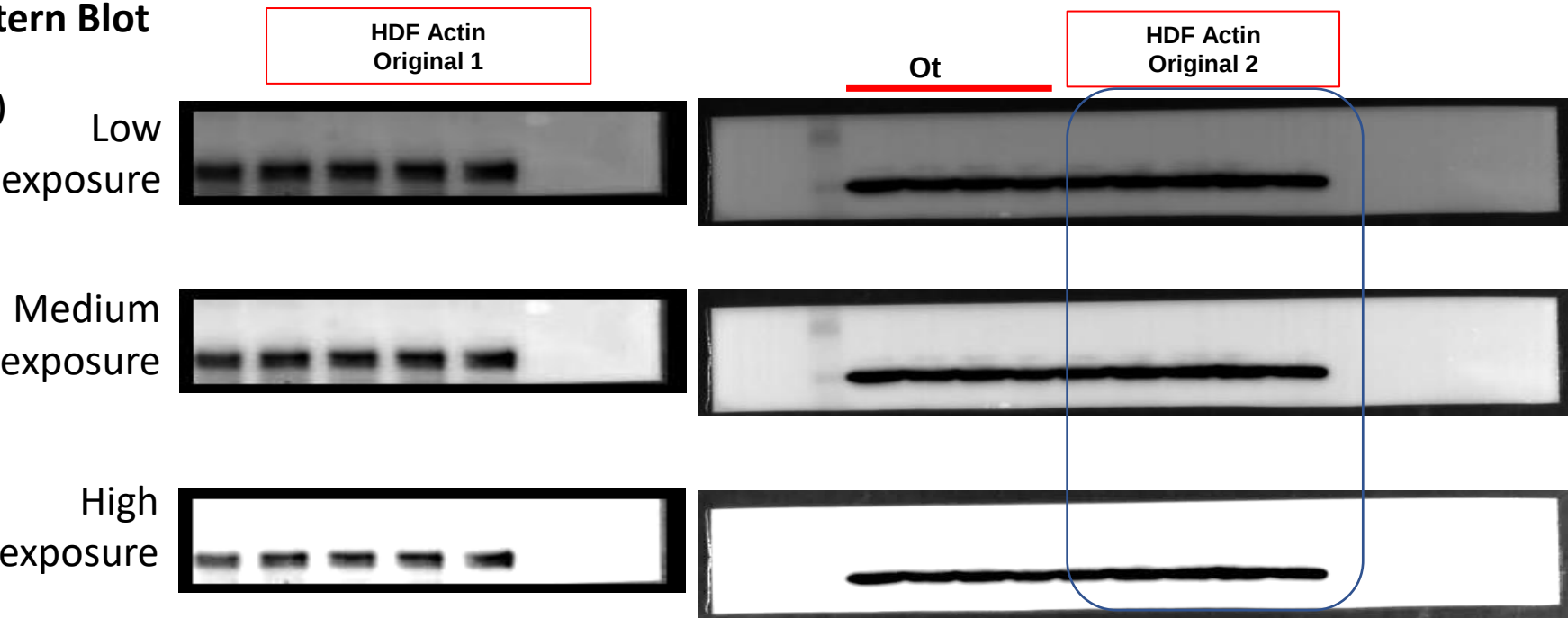
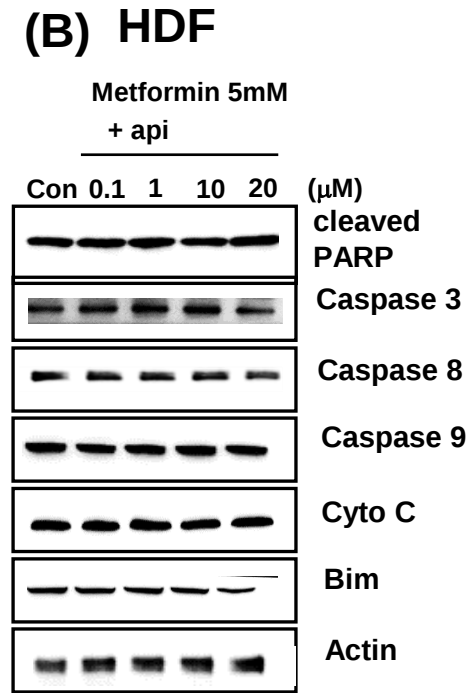
Medium exposure

High exposure



Multiple Exposure Images-Western Blot

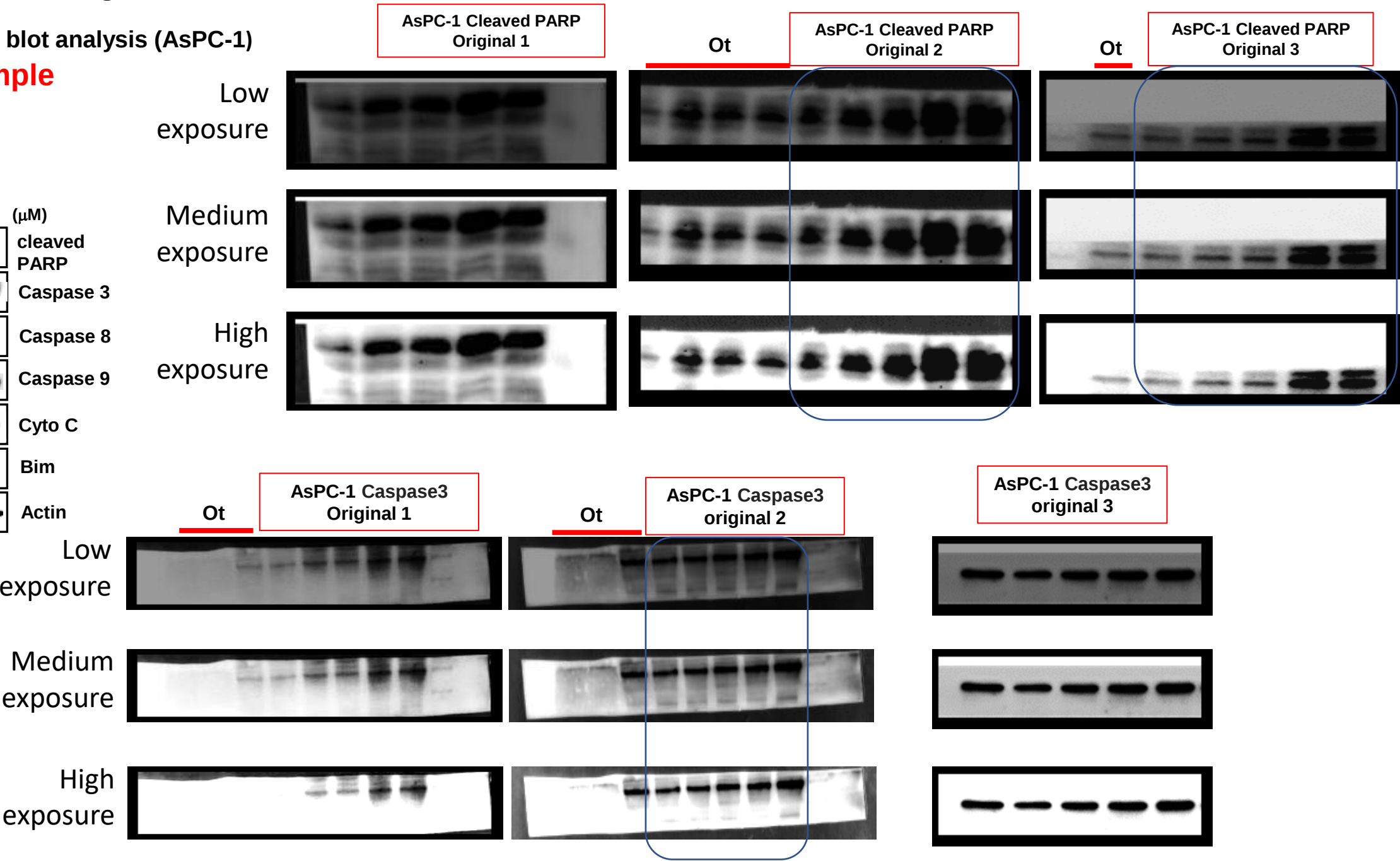
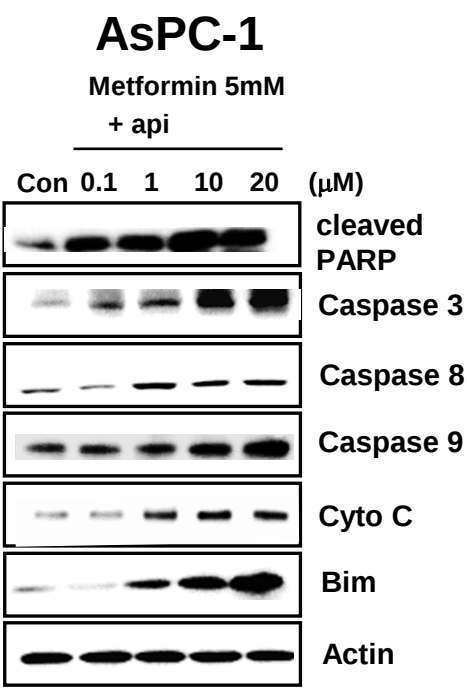
Fig.5 B western blot analysis (HDF)
Ot: other sample



Multiple Exposure Images-Western Blot

Fig.5 B western blot analysis (AsPC-1)

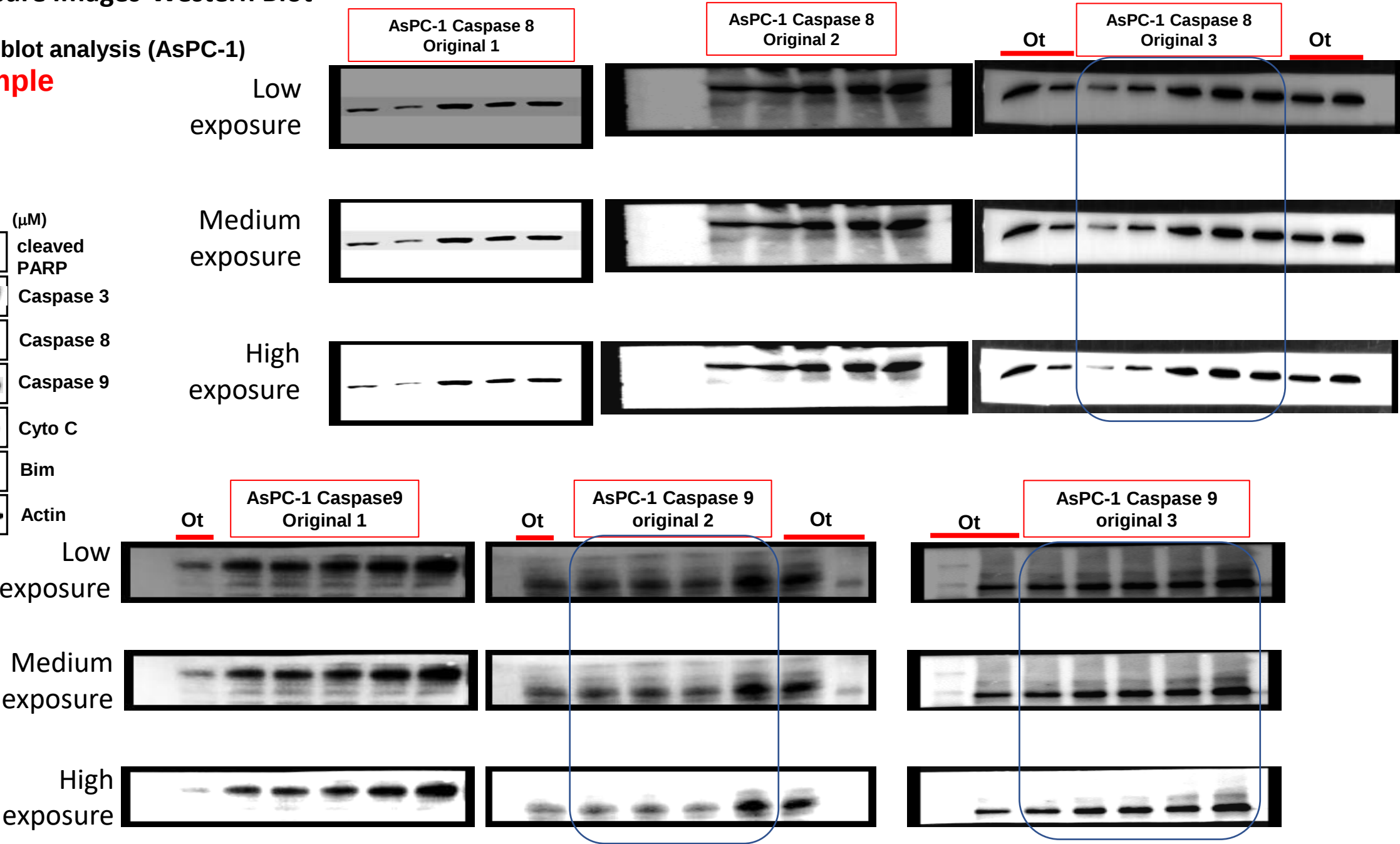
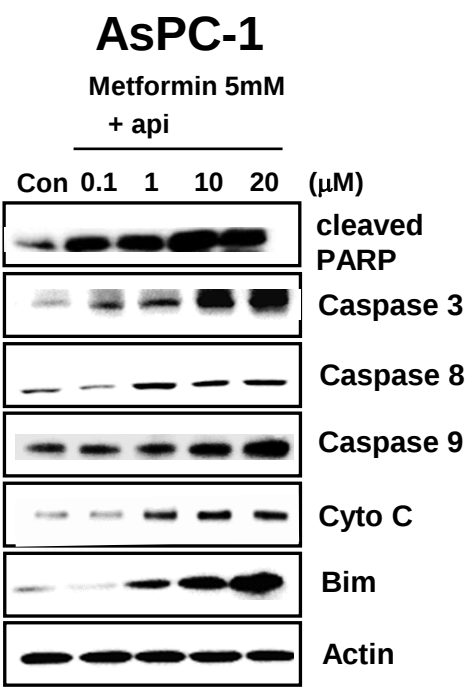
Ot: other sample



Multiple Exposure Images-Western Blot

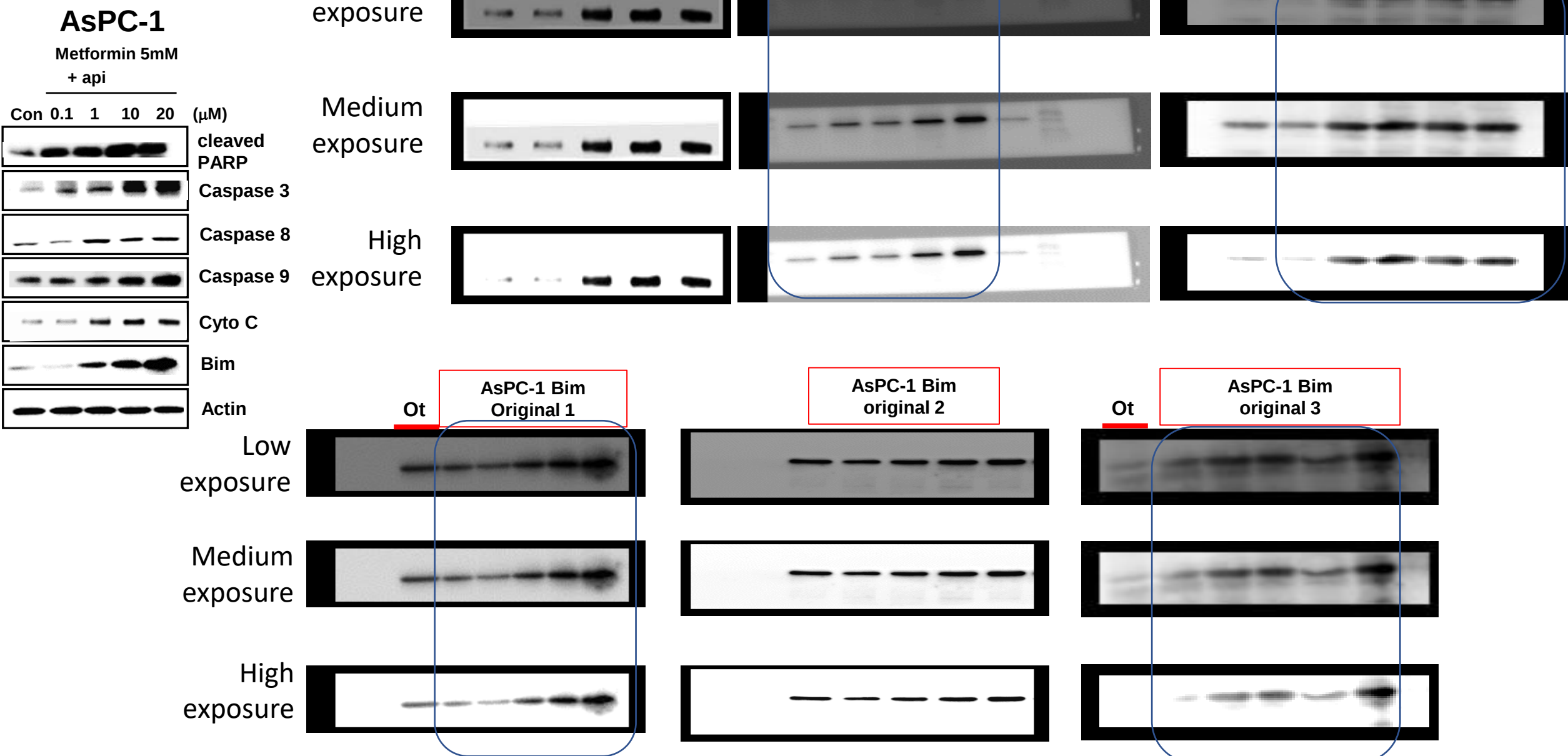
Fig.5 B western blot analysis (AsPC-1)

Ot: other sample



Multiple Exposure Images-Western Blot

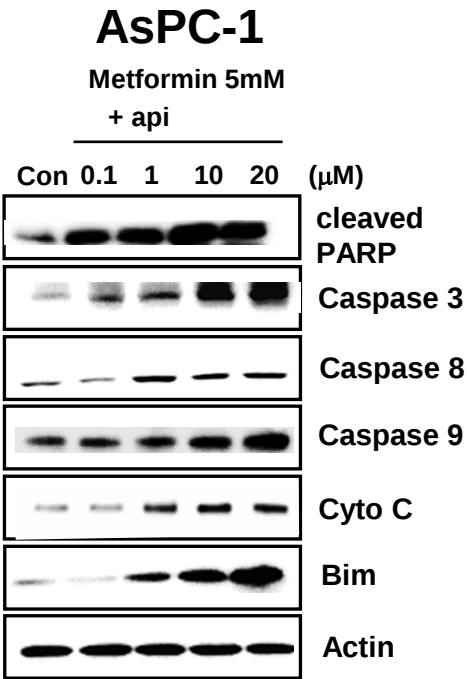
Fig.5 B western blot analysis (AsPC-1)
Ot: other sample



Multiple Exposure Images-Western Blot

Fig.5 B western blot analysis (AsPC-1)

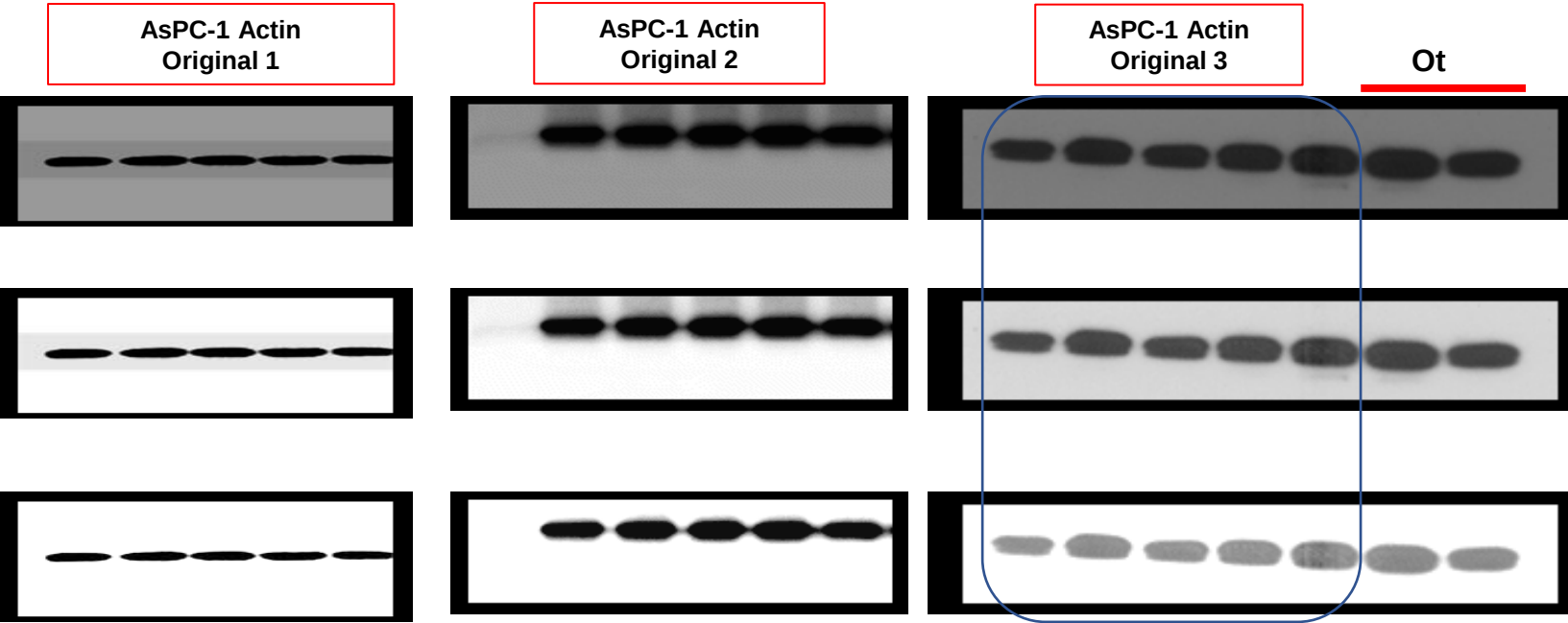
Ot: other sample



Low exposure

Medium exposure

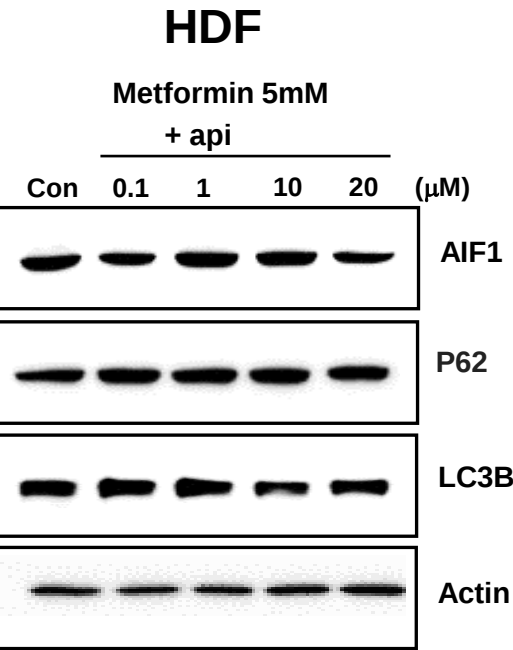
High exposure



Multiple Exposure Images-Western Blot

Fig.6 A western blot analysis (HDF)

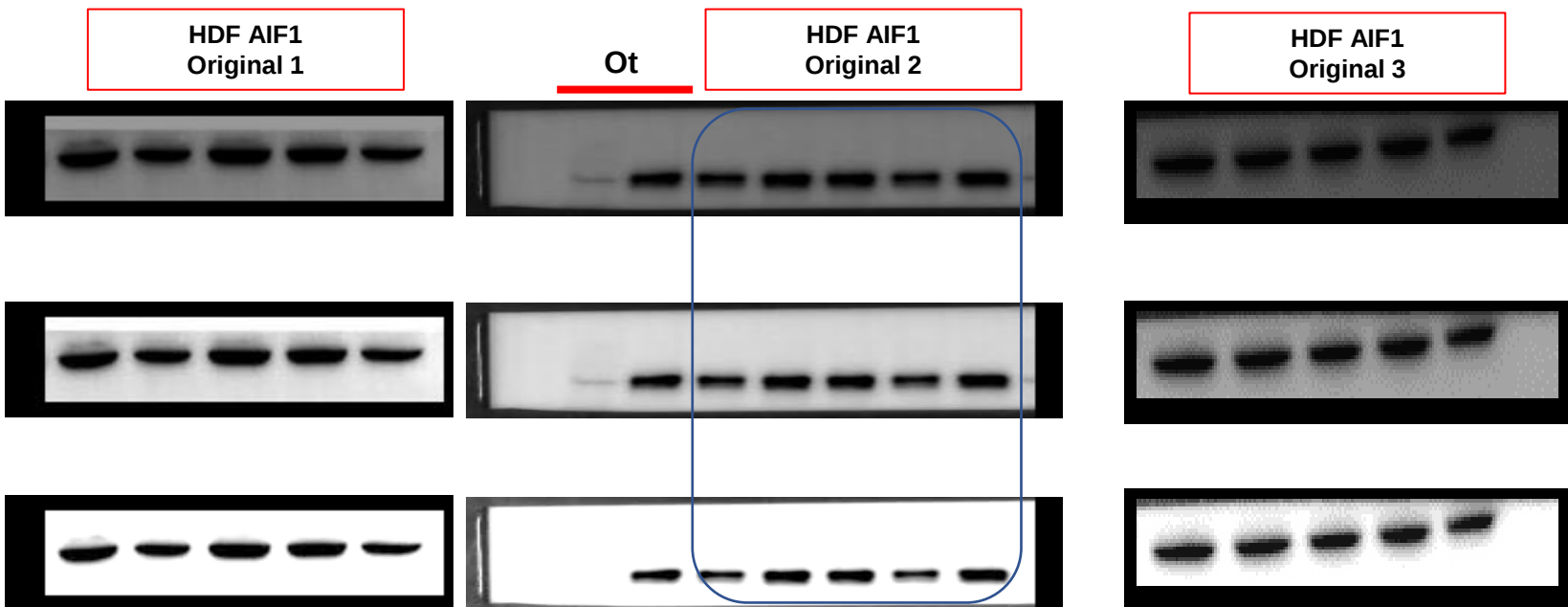
Ot: other sample



Low exposure

Medium exposure

High exposure



HDF P62 Original 1

HDF P62 original 2

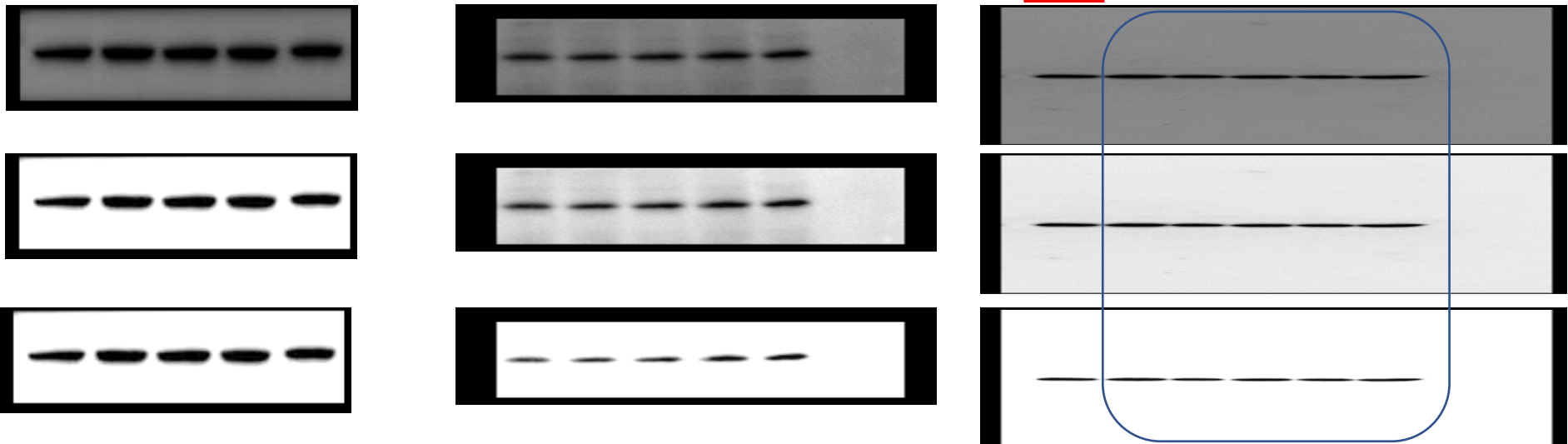
Ot

HDF P62 original 3

Low exposure

Medium exposure

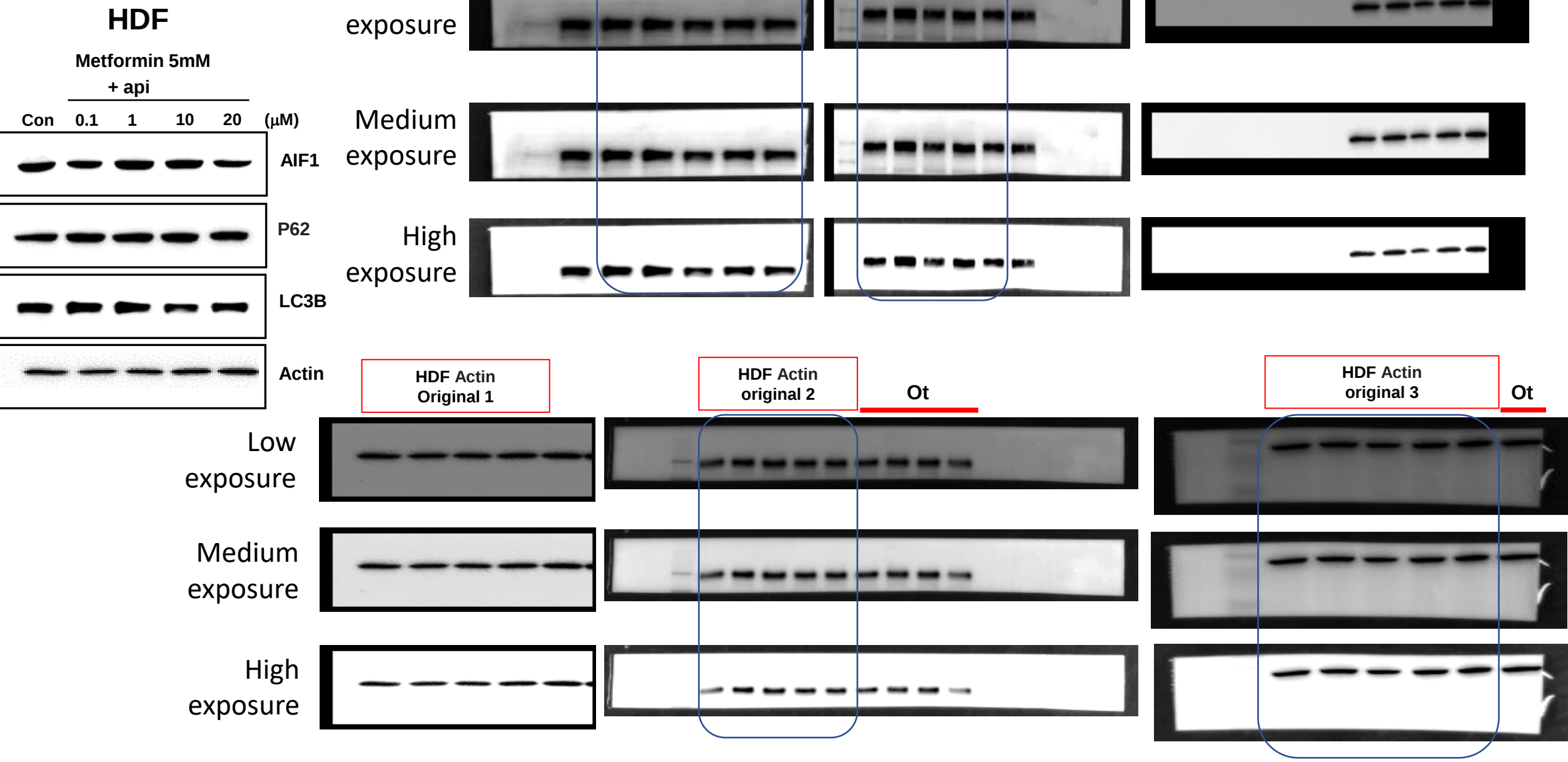
High exposure



Multiple Exposure Images-Western Blot

Fig.6 A western blot analysis (HDF)

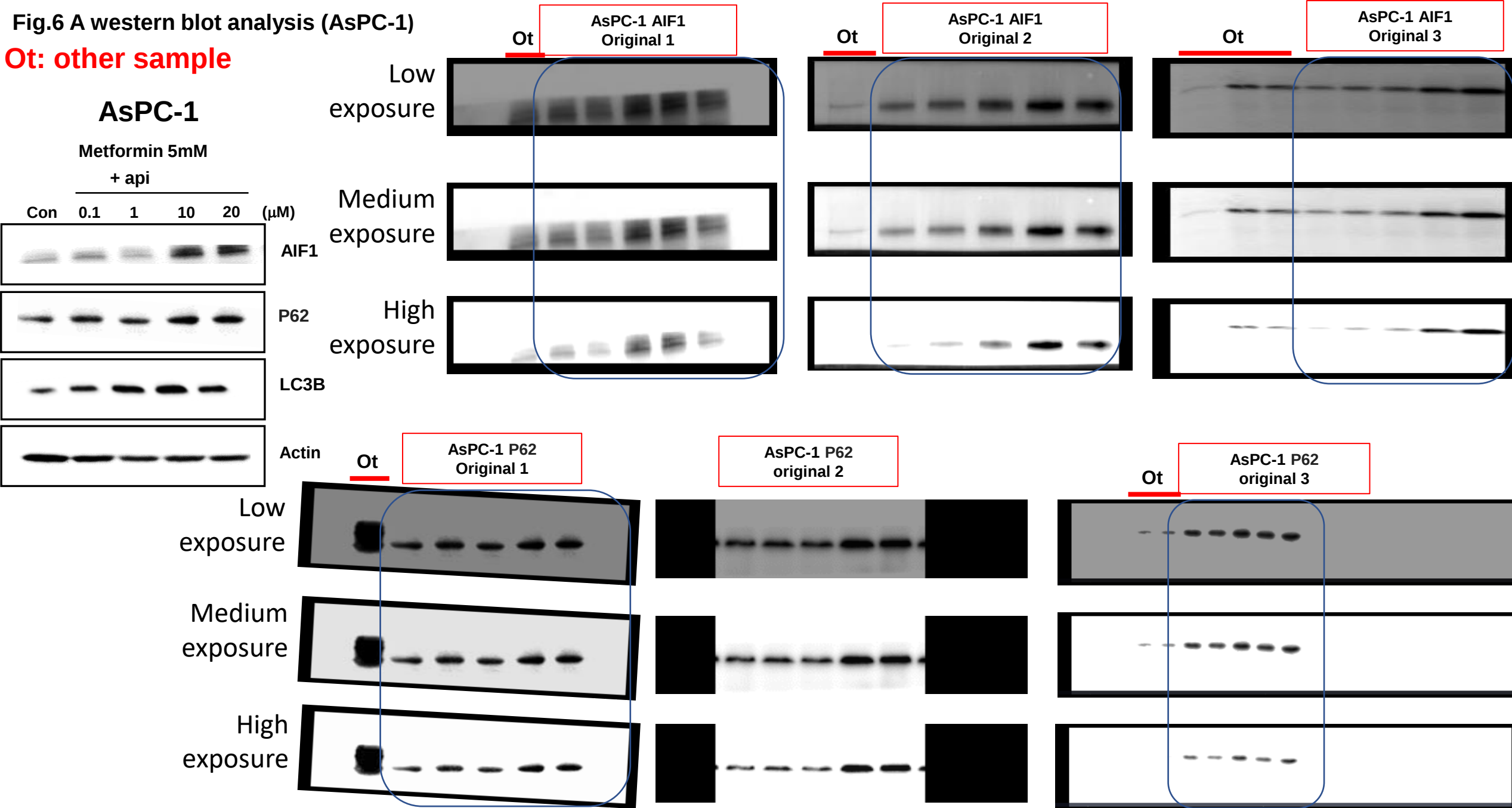
Ot: other sample



Multiple Exposure Images-Western Blot

Fig.6 A western blot analysis (AsPC-1)

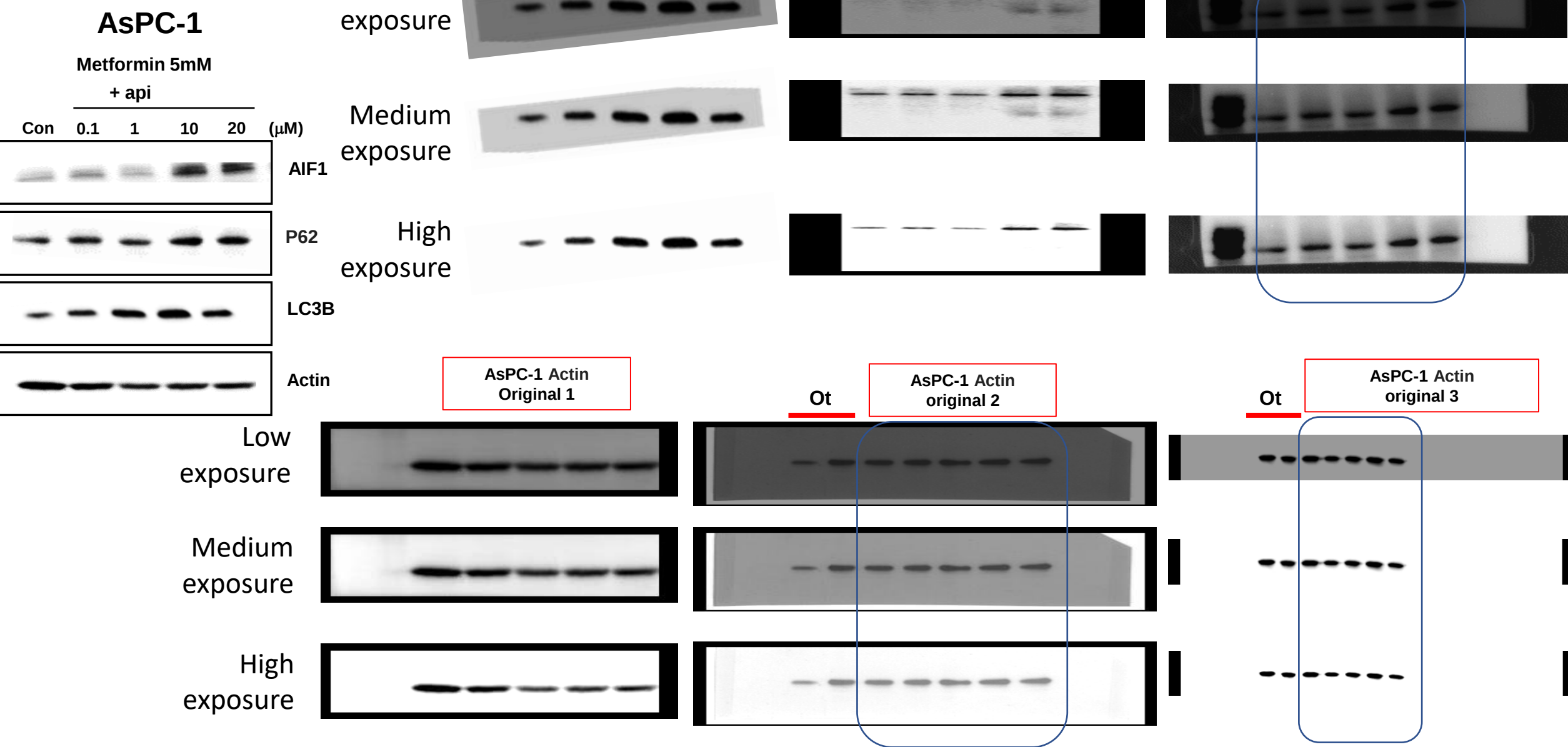
Ot: other sample



Multiple Exposure Images-Western Blot

Fig.6 A western blot analysis (AsPC-1)

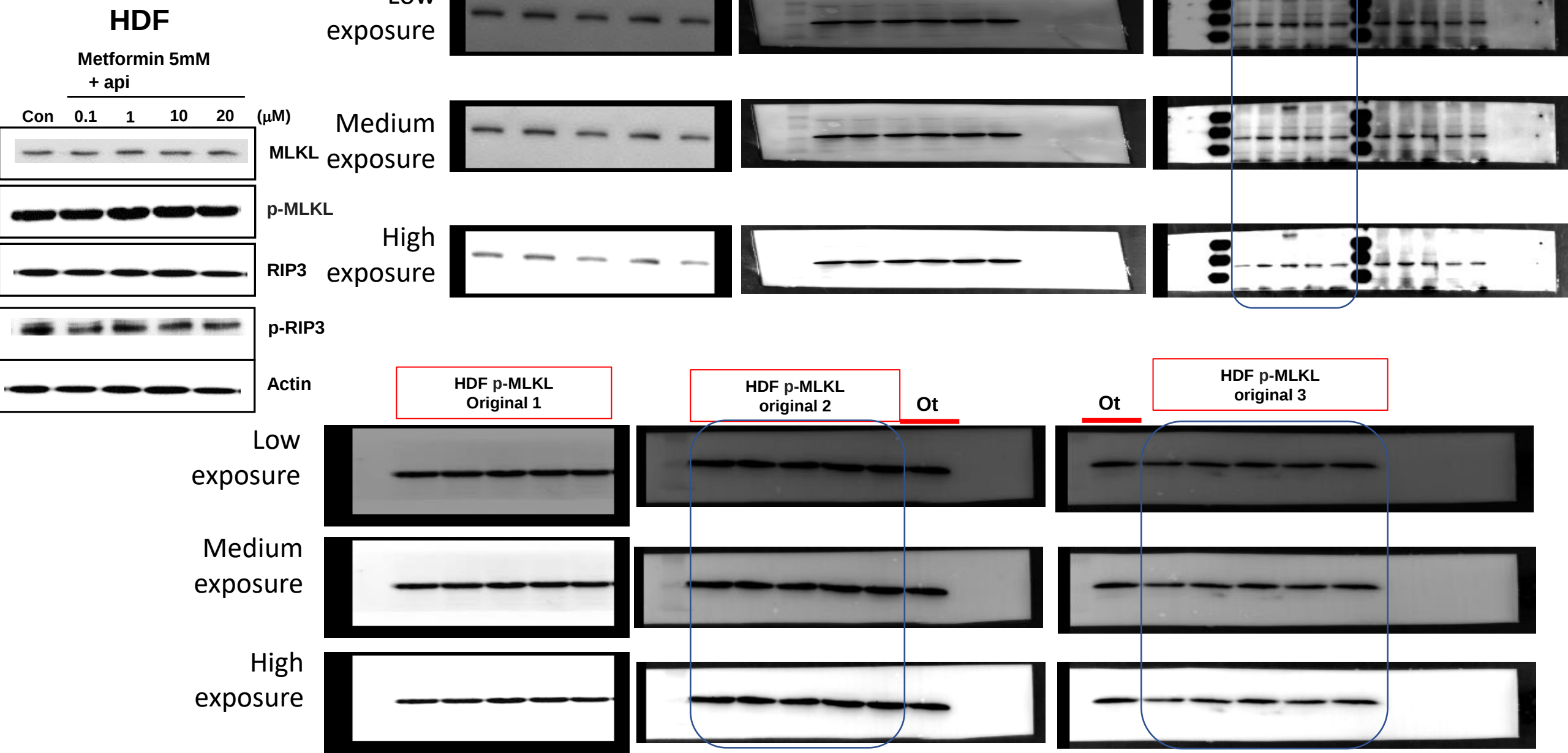
Ot: other sample



Multiple Exposure Images-Western Blot

Fig.6B western blot analysis (HDF)

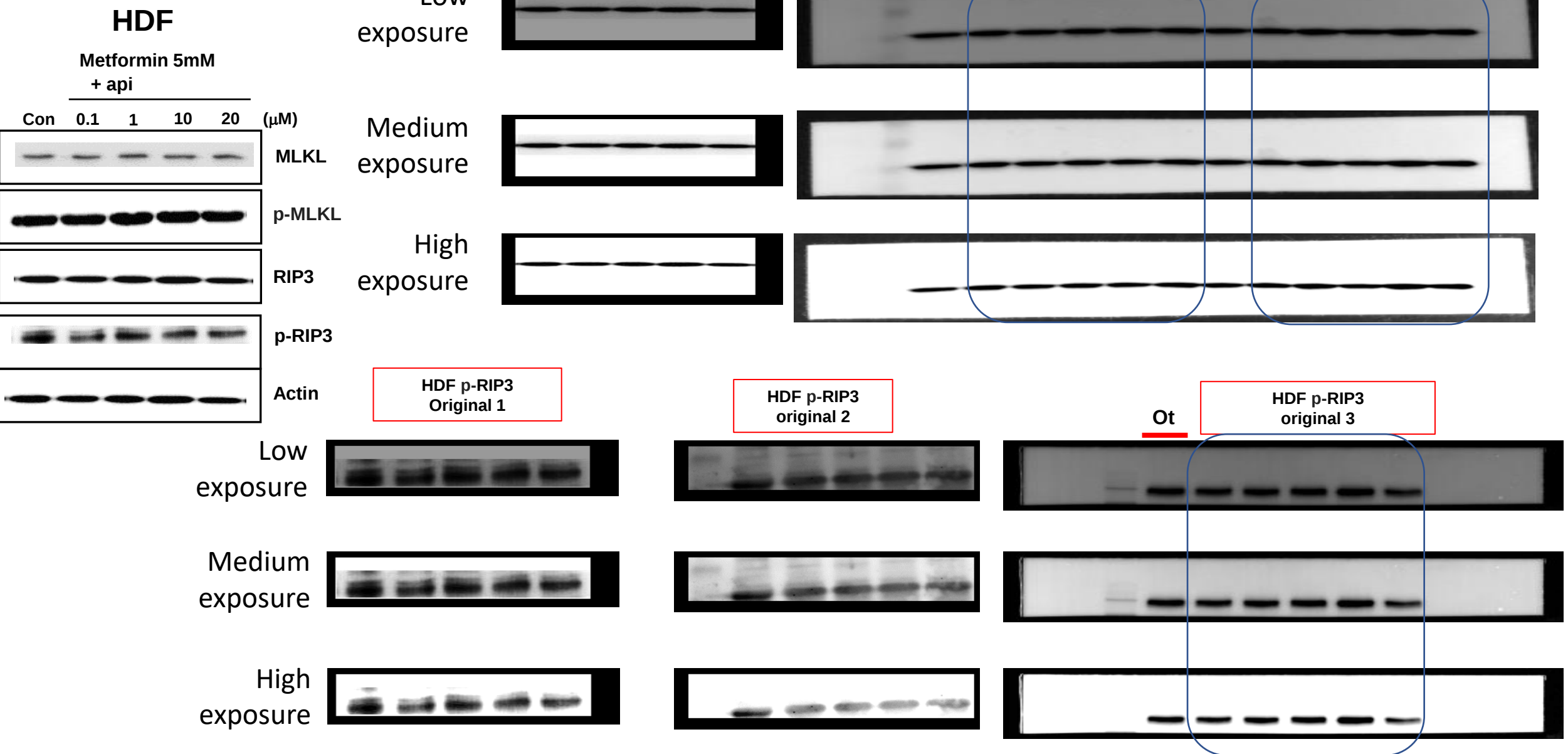
Ot: other sample



Multiple Exposure Images-Western Blot

Fig.6B western blot analysis (HDF)

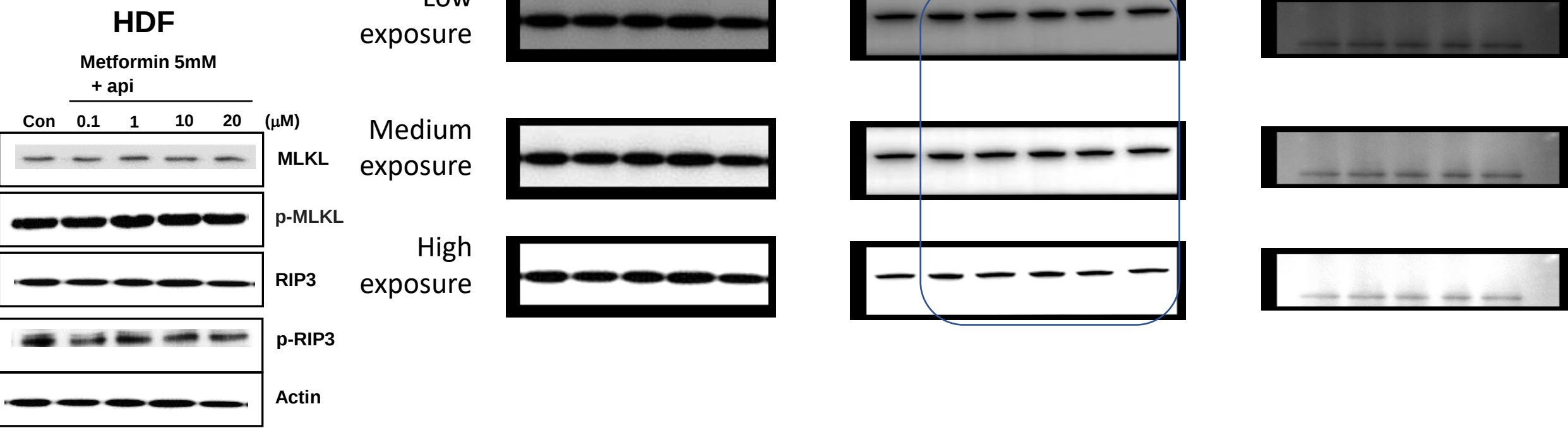
Ot: other sample



Multiple Exposure Images-Western Blot

Fig.6 B western blot analysis (HDF)

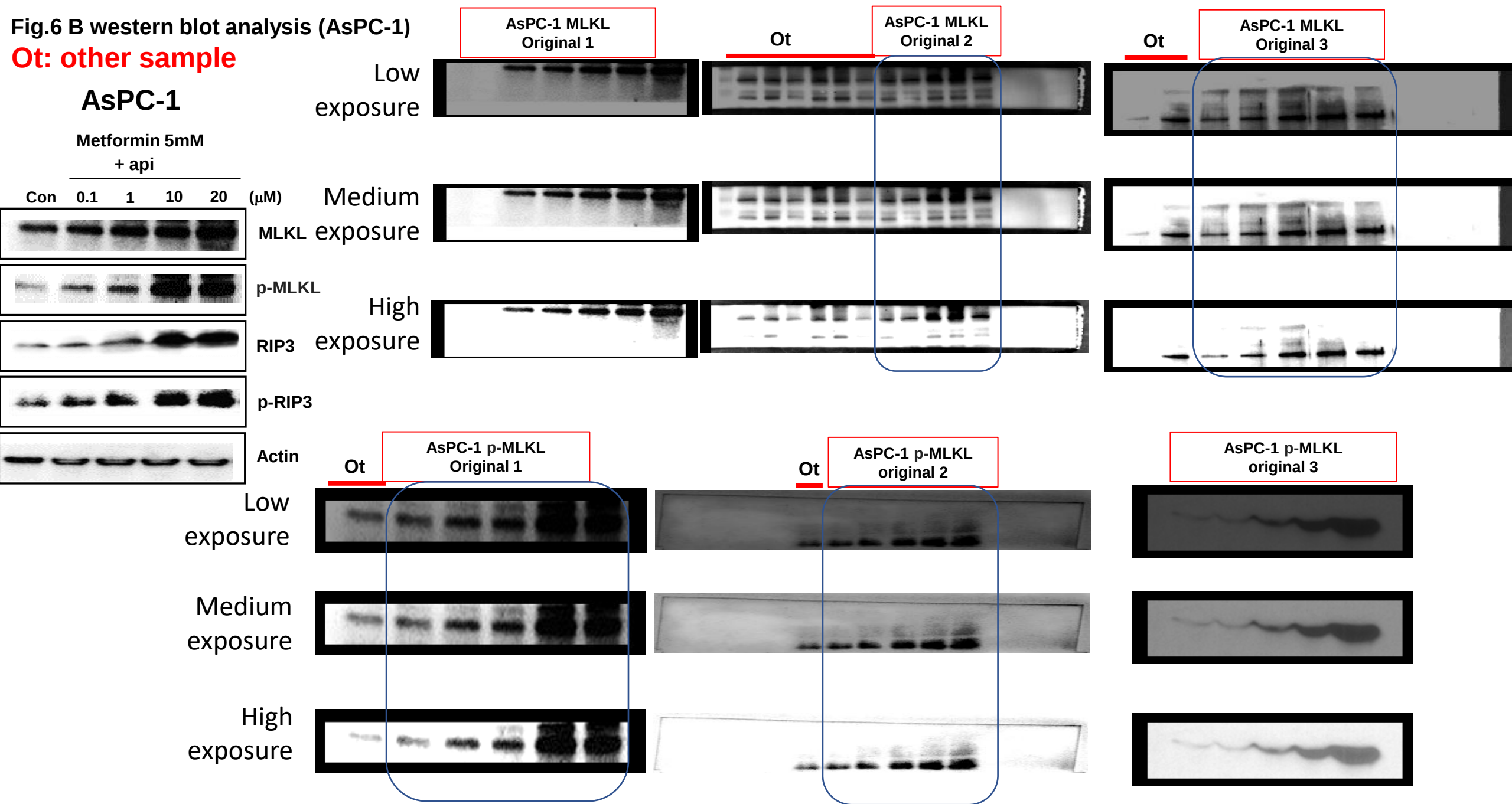
Ot: other sample



Multiple Exposure Images-Western Blot

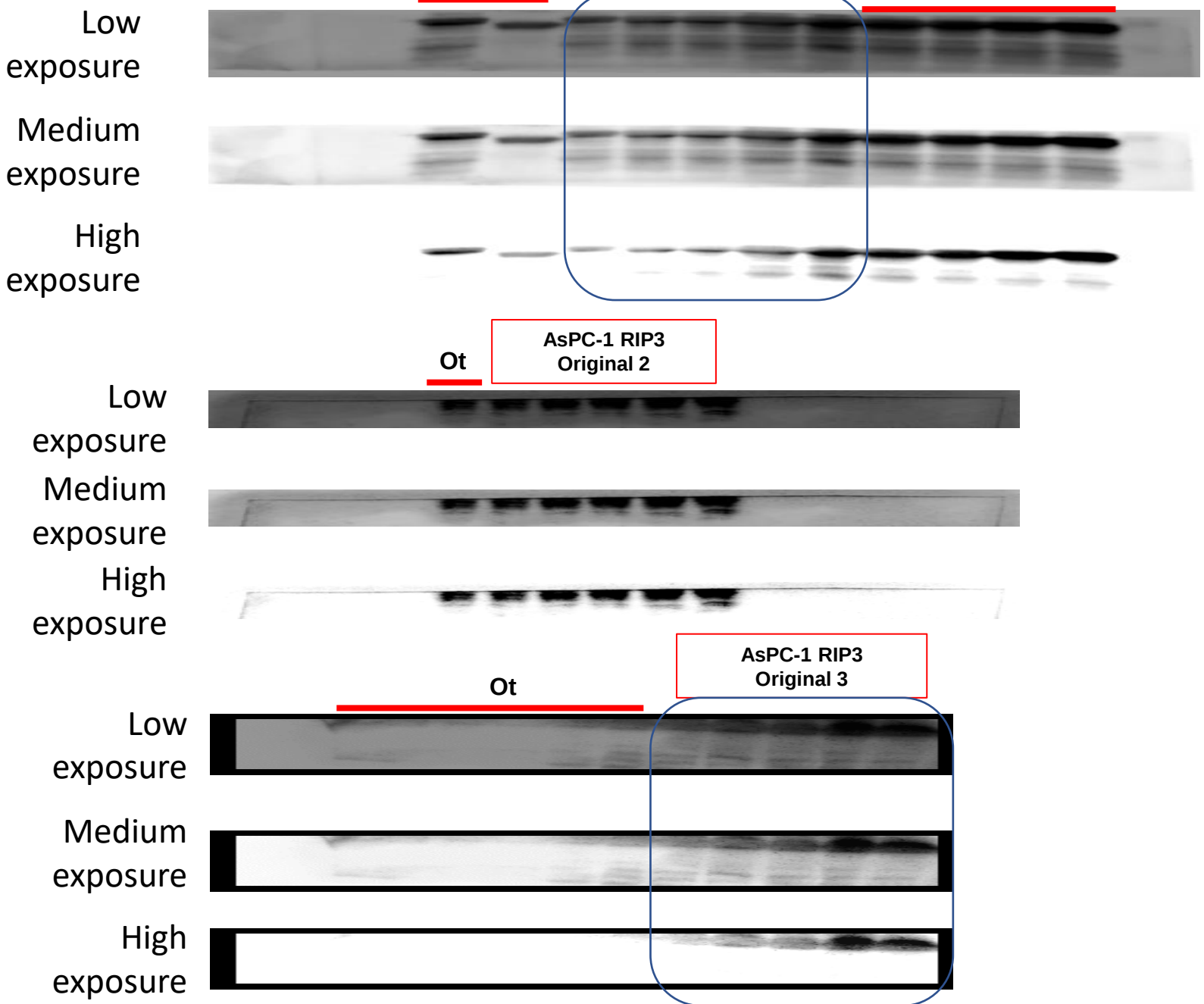
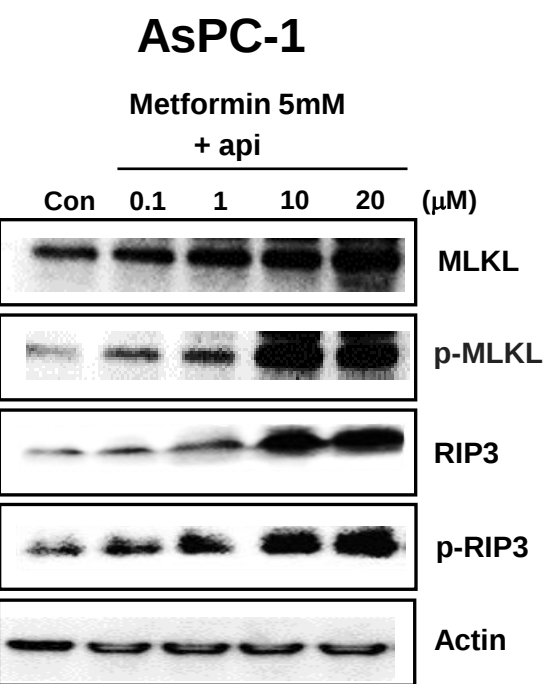
Fig.6 B western blot analysis (AsPC-1)

Ot: other sample



Multiple Exposure Images-Western Blot

Fig.6 B western blot analysis
(AsPC-1)
Ot: other sample



Multiple Exposure Images-Western Blot

Fig.6 B western blot analysis (AsPC-1)

Ot: other sample

