## Western blot Raw images

All images were obtained by using BioRad Imagelab software as detailed in main text methods section. Images are presented in the order they appear in Figure 11 of the main text. Molecular weights of the biotyinlated ladder (Cell signalling. Product#7727) are included in text. The red box indicates the area chosen to be used in Figure 11.
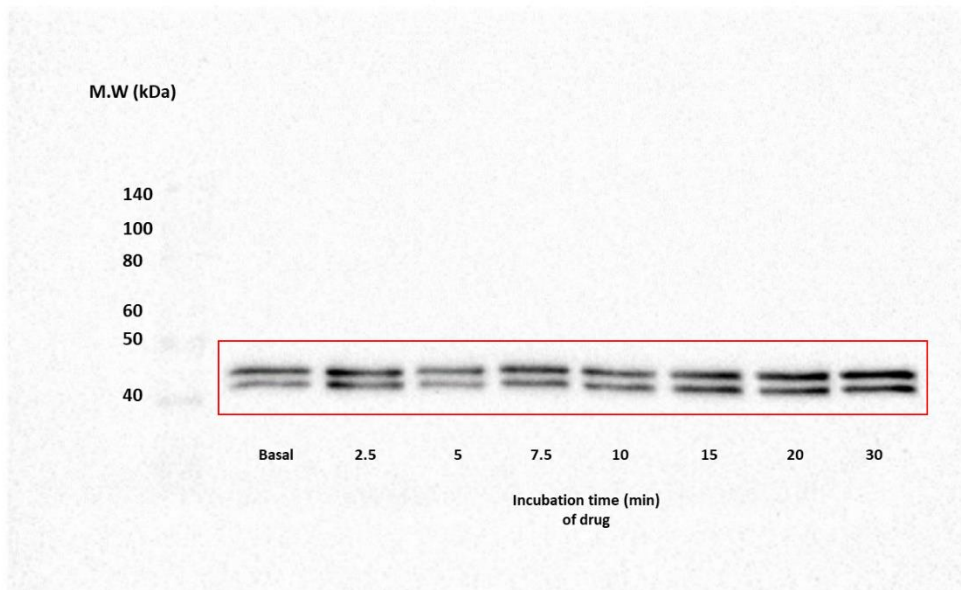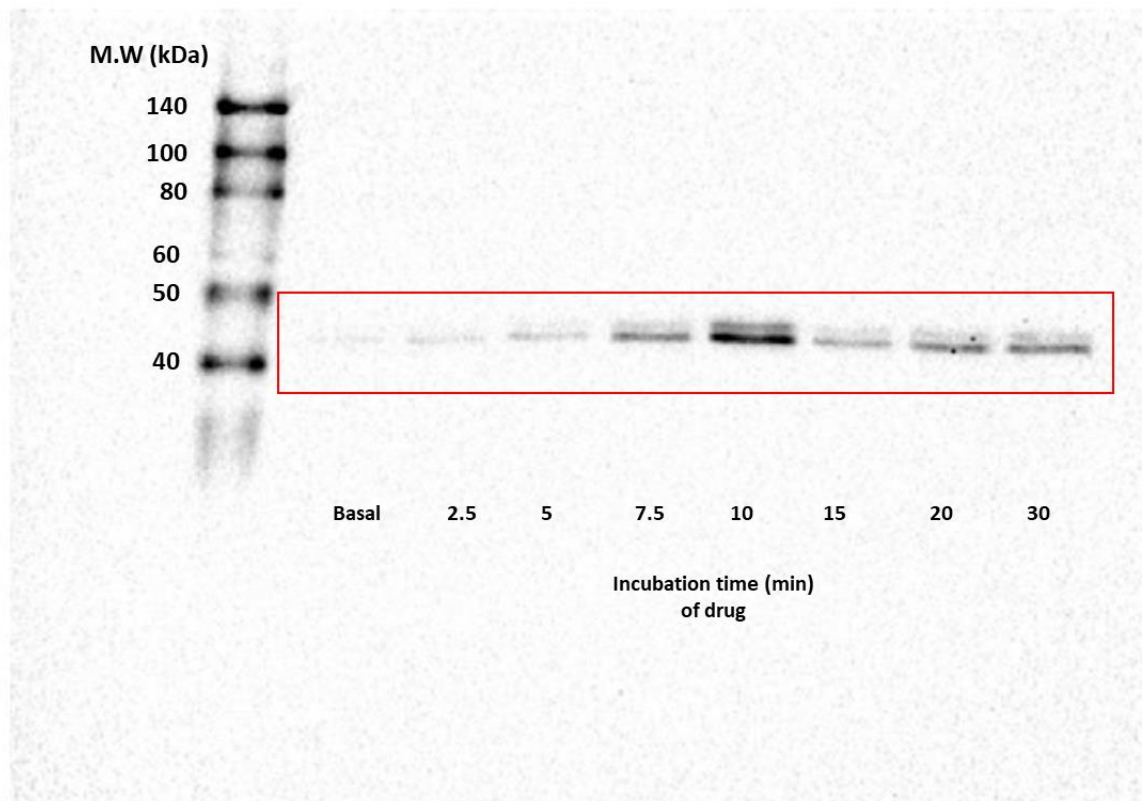
HEK$_{MOP}$ Western blot results

HEK$_{MOP}$ Dermorphin phospho-ERK1/2
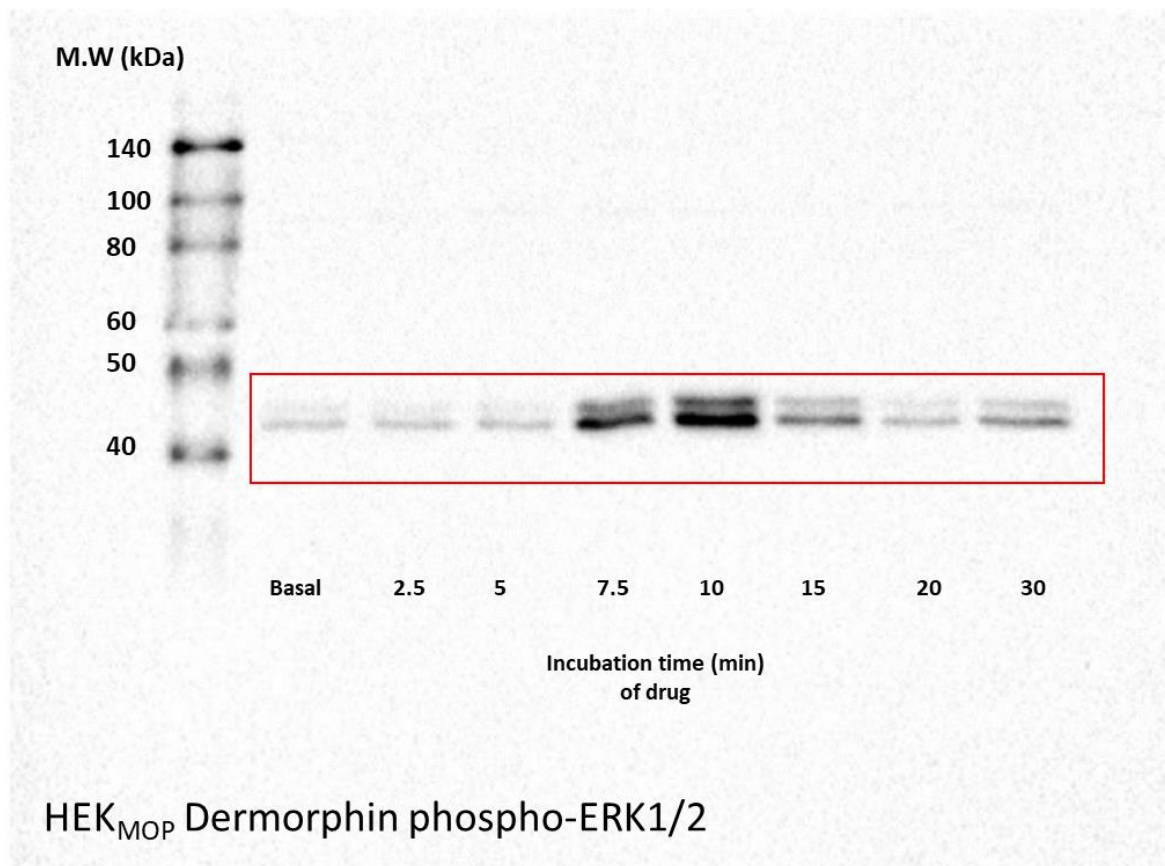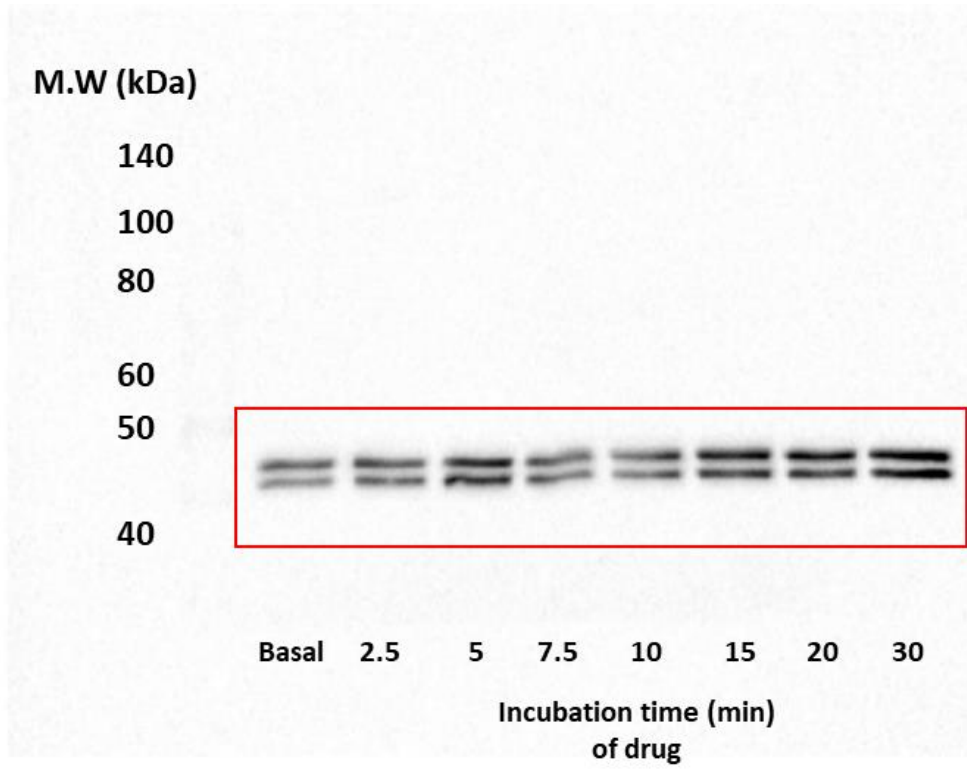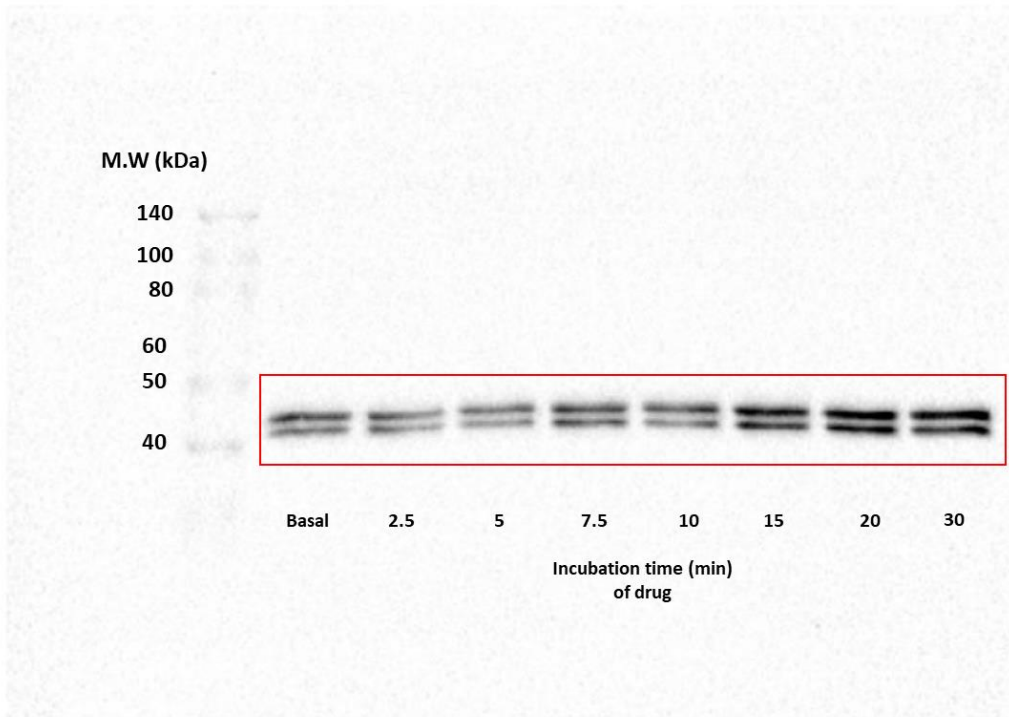
HEK~MOP~ Dermorphin Total ERK1/2
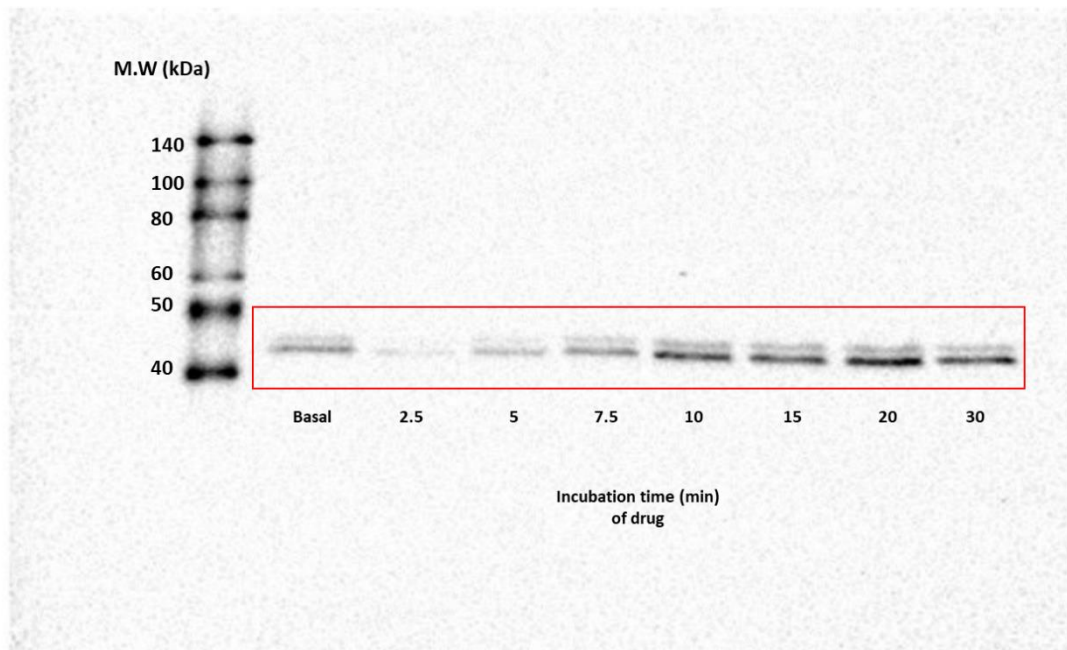
HEK~MOP~ DeNO phospho-ERK1/2
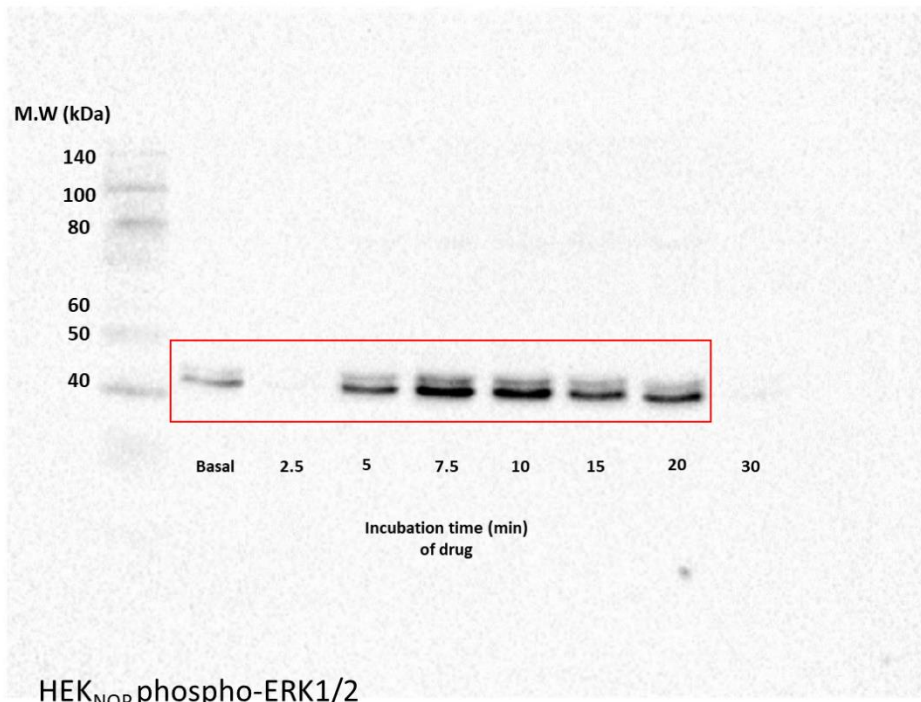
HEK_MOP DeNO Total ERK1/2

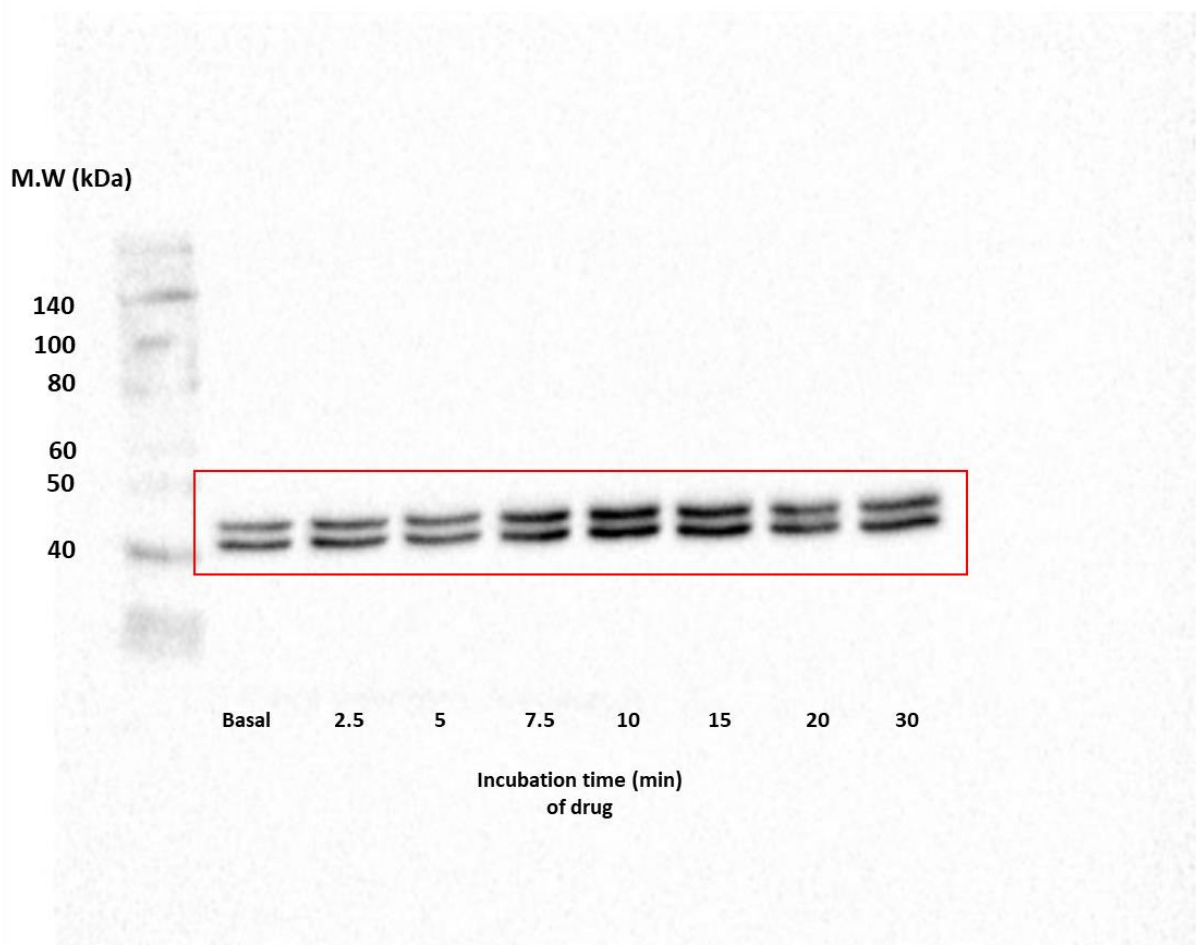HEK_MOP De101 phospho-ERK1/2

HEK_{MOP} De101 Total ERK1/2

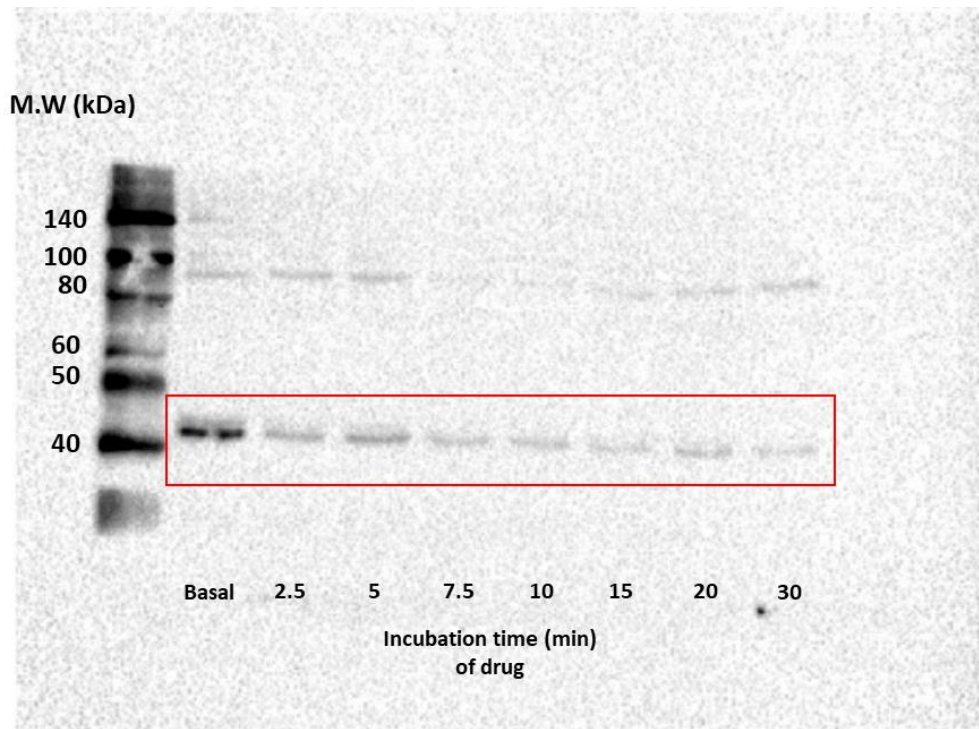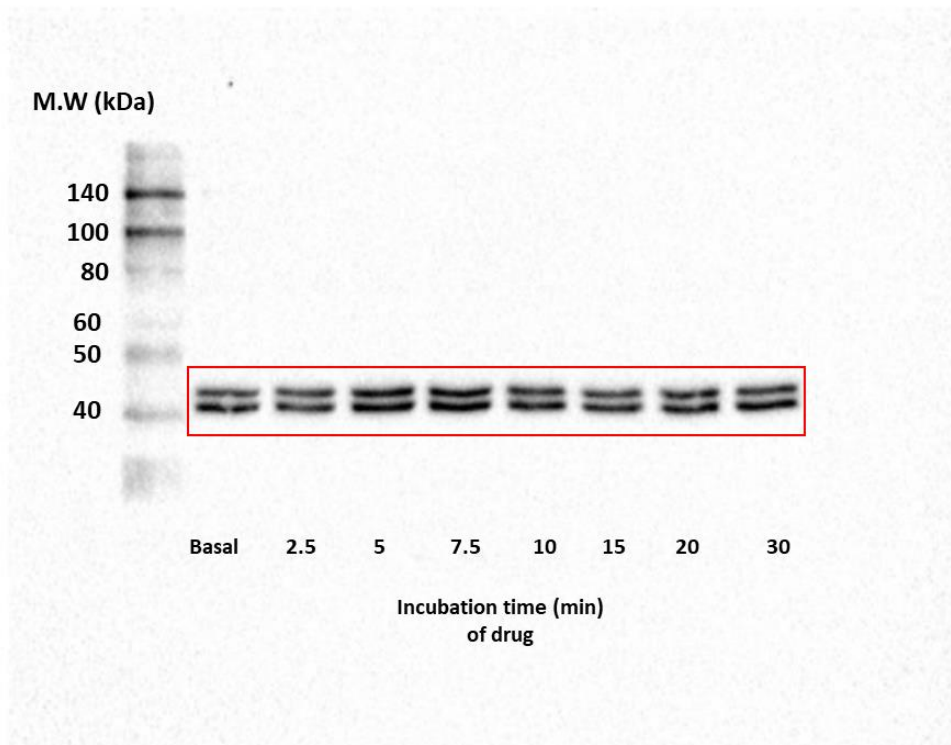**HEK_{NOP} Western blot results**

HEK_{NOP} phospho-ERK1/2

M.W (kDa)

140
100
80

60
50

40

Basal   2.5   5   7.5   10   15   20   30

**Incubation time (min)
of drug**

HEK$_{NOP}$ N/OFQTotal ERK1/2

M.W (kDa)

140
100
80
60
50
40

| Basal | 2.5 | 5 | 7.5 | 10 | 15 | 20 | 30 |

Incubation time (min)
of drug

HEK$_{NOP}$ DeNO phospho-ERK1/2

M.W (kDa)

140
100
80
60
50
40

| Basal | 2.5 | 5 | 7.5 | 10 | 15 | 20 | 30 |

Incubation time (min)
of drug
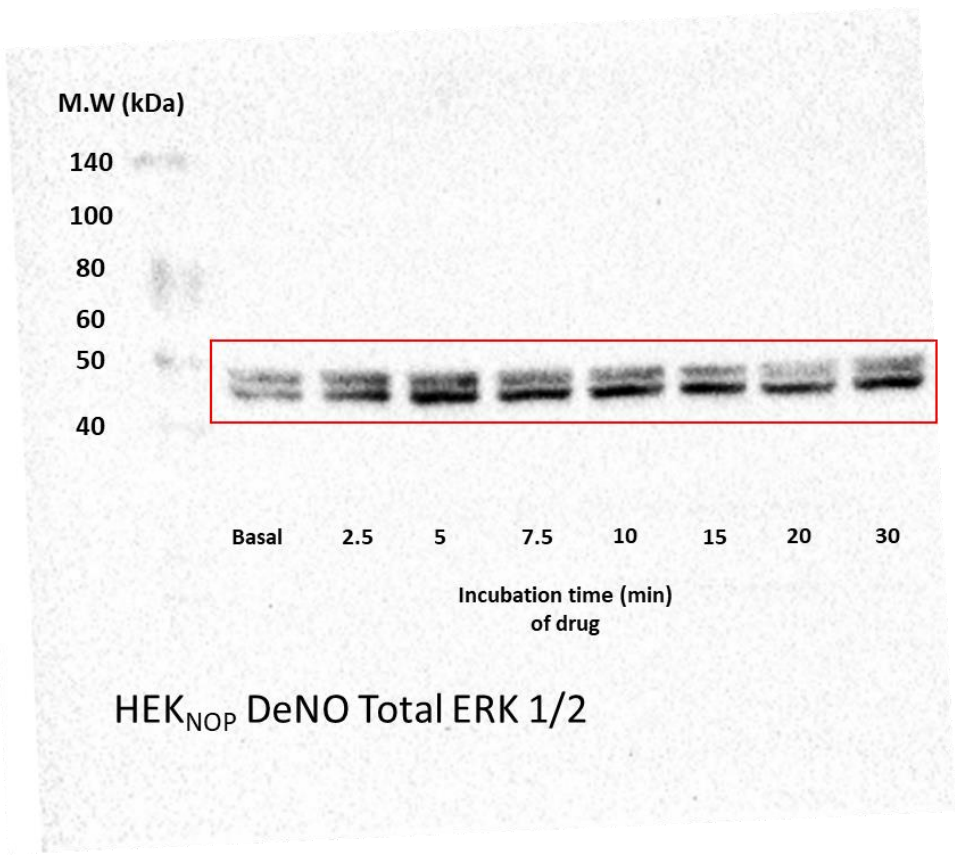
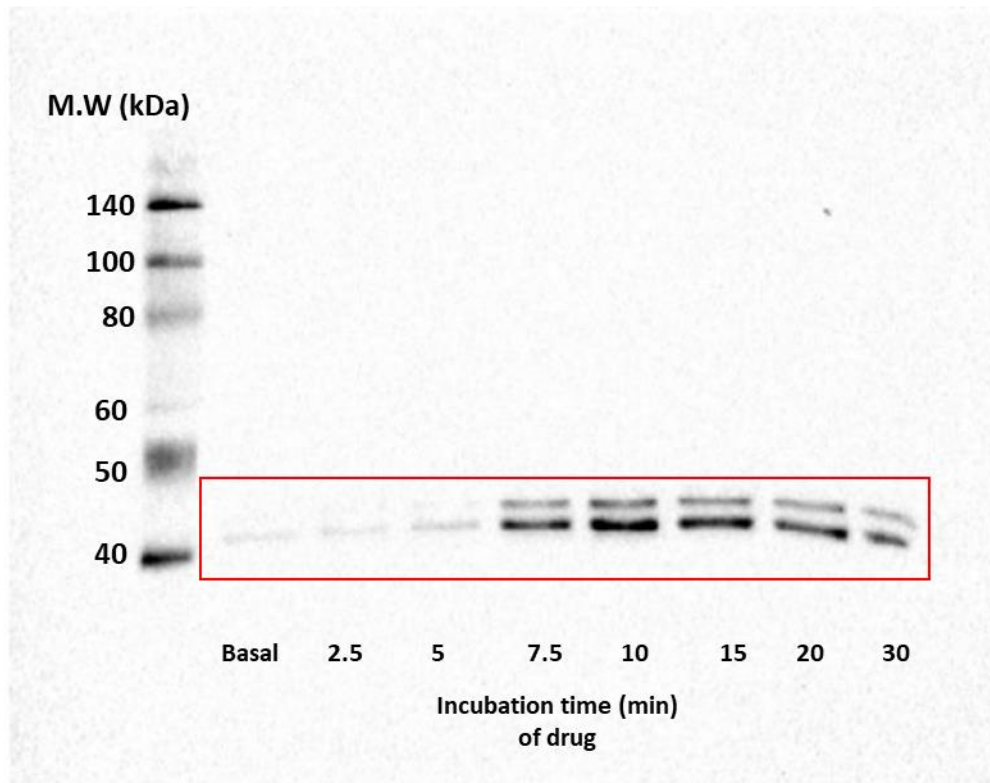HEK$_{NOP}$ DeNO Total ERK 1/2

HEK_{NOP} De101 phospho-ERK1/2
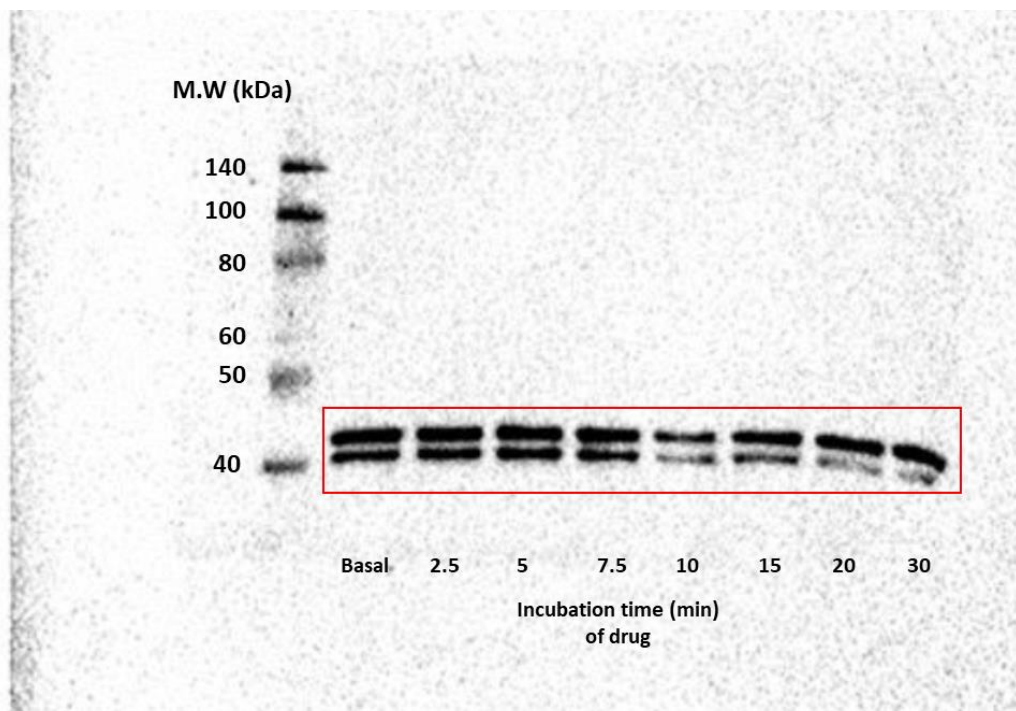

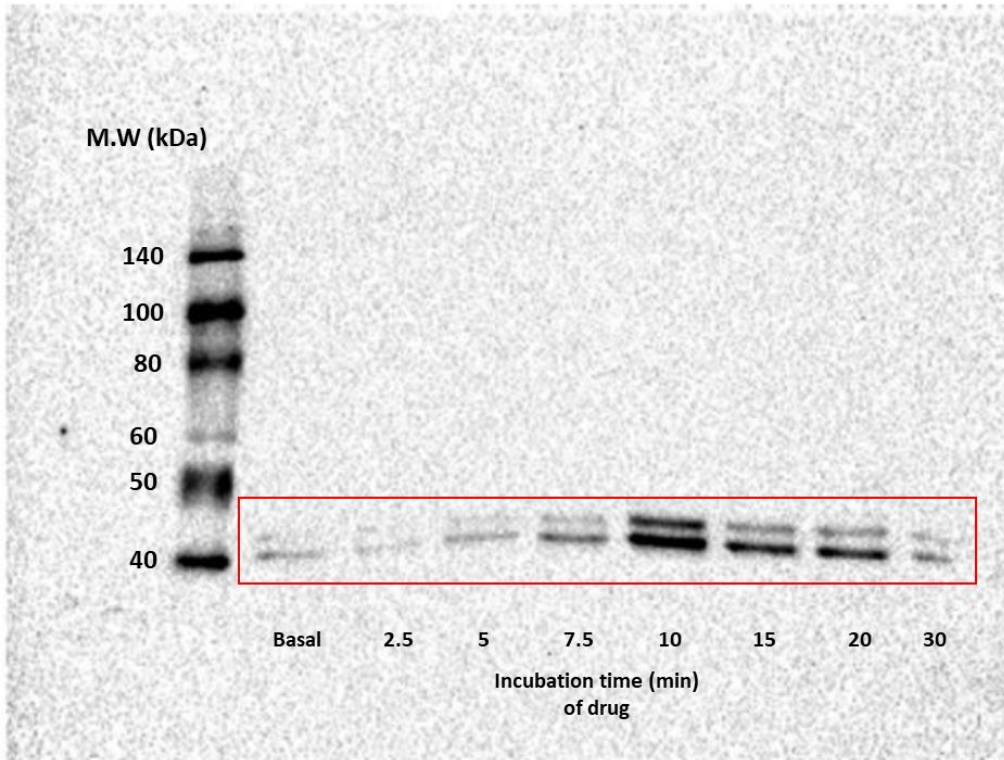HEK_{NOP} De101 Total ERK1/2

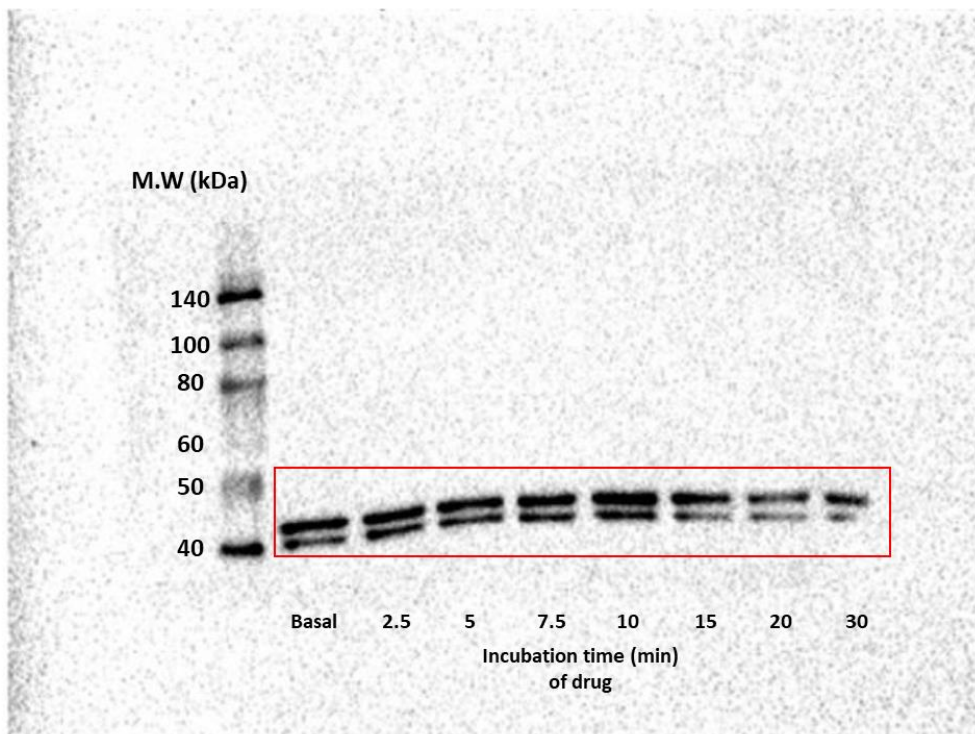**HEK_{MOP/NOP} Western blot results**

HEK_{MOP/NOP} Dermorphin phospho-ERK1/2
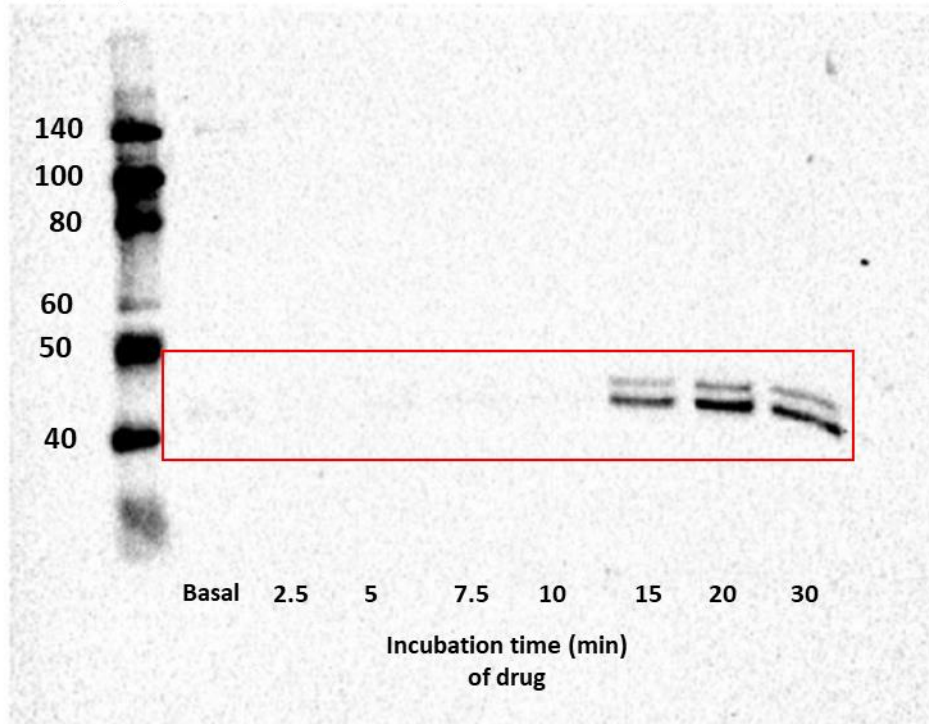

HEK_{MOP/NOP} Dermorphin Total ERK1/2
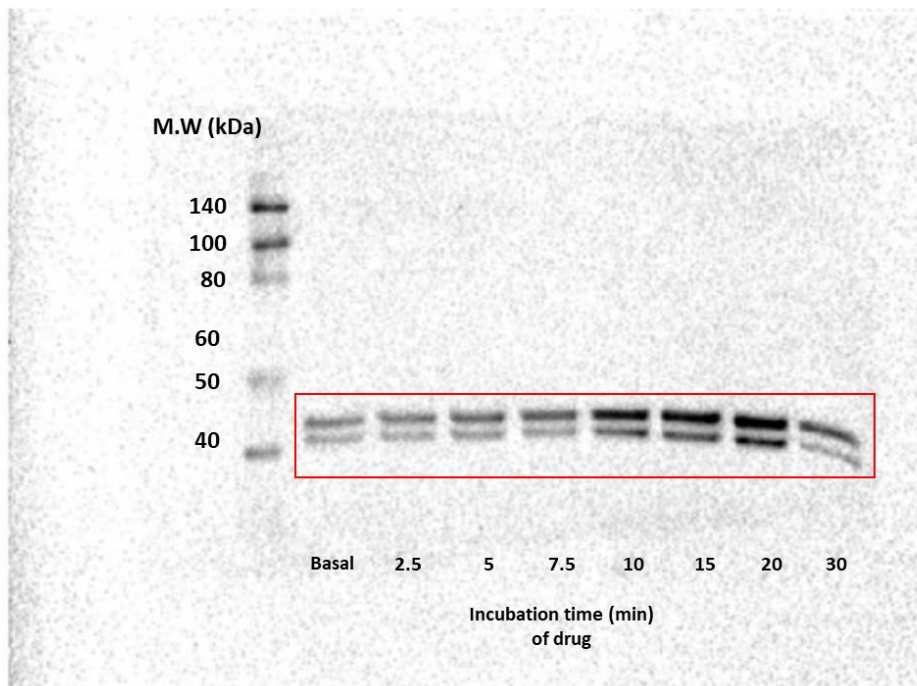
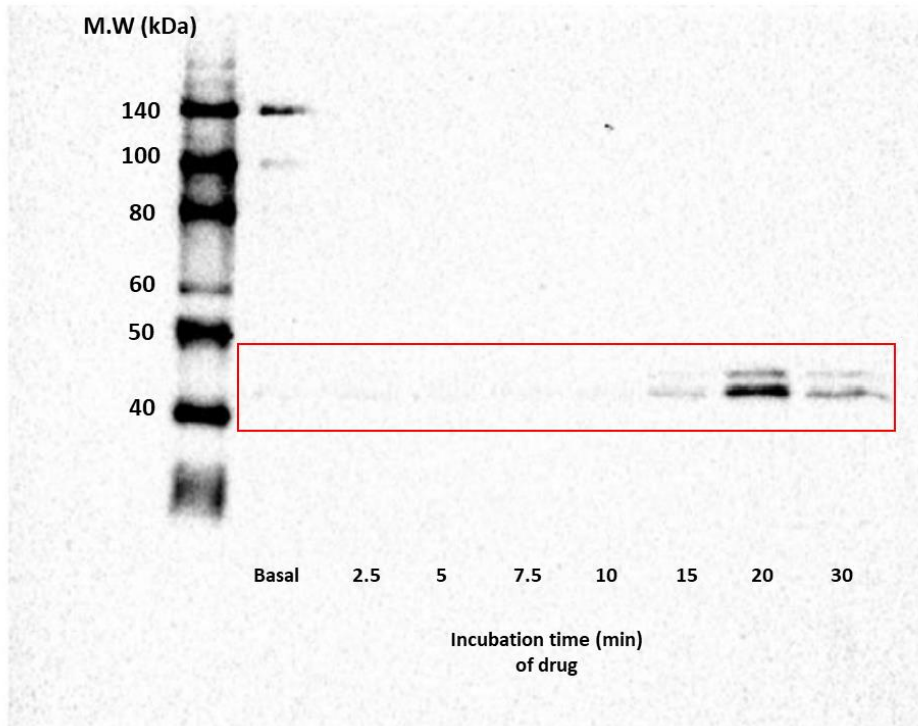HEK$_{MOP/NOP}$ N/OFQ phospho-ERK1/2

HEK$_{MOP/NOP}$ N/OFQ Total ERK 1/2

M.W (kDa)

140
100
80

60
50

40

Basal   2.5   5   7.5   10   15   20   30

Incubation time (min)
of drug

HEK_{MOP/NOP} DeNO phosphor-ERK1/2

M.W (kDa)

140
100
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Basal   2.5   5   7.5   10   15   20   30

Incubation time (min)
of drug
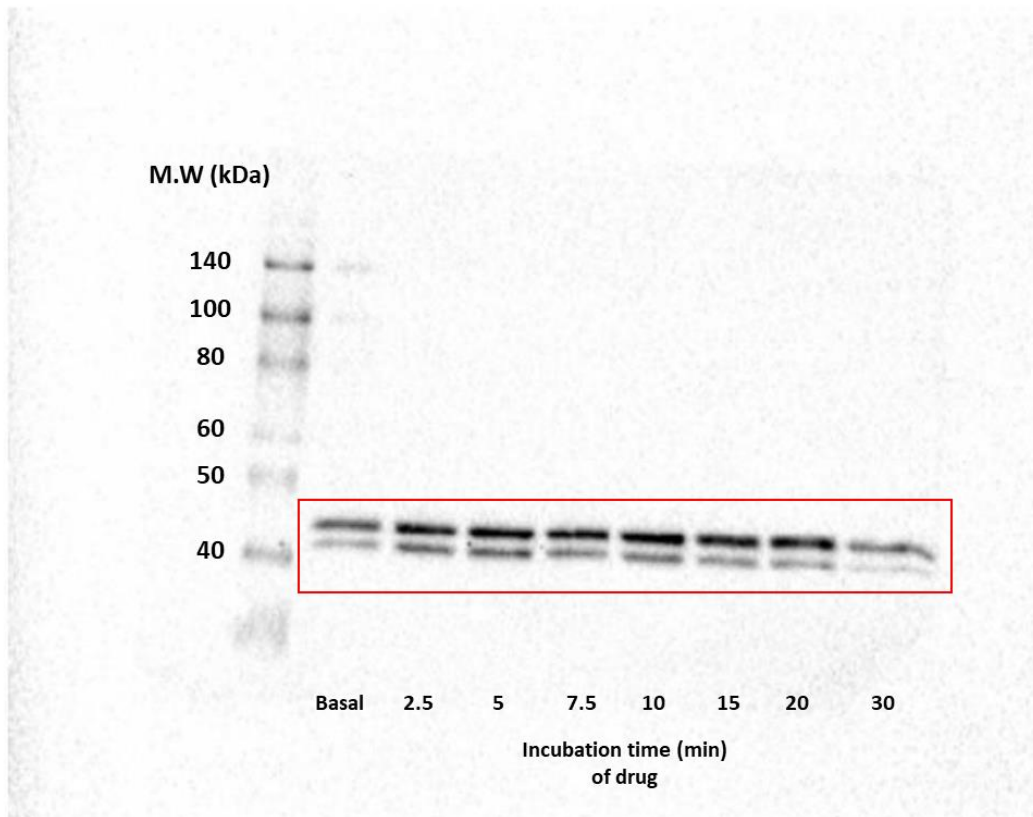
HEK_{MOP/NOP} DeNO Total ERK1/2

HEK_{MOP/NOP} De101 phospho-ERK1/2

HEK_{MOP/NOP} De101 Total ERK1/2