

ERRATUM

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Erratum to: PDK1-mTOR signaling pathway inhibitors reduce cell proliferation in MK2206 resistant neuroblastoma cells

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**Erratum to: *Cancer Cell Int* (2015) 15:91
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Unfortunately, the original version of this article [1] contained an error. After publication it came to the authors' attention that the figure legends were displayed incorrectly. The correct figure legends can be found below in this erratum.

Fig. 1 MK-2206 suppressed the cell growth of NB cells. **a** MK-2206 suppressed the cell growth of NB cell lines. LAN-1, KP-N-SIFA, NB-19, and SK-N-DZ cells were cultured in RPMI1640 + 10 % FBS with MK-2206 at indicated concentrations. Cell growth was evaluated as cell numbers at 72 h, and it was repeated three times. Data are expressed as the mean (\pm SD). **b** Photomicrographs of MK-2206 non-resistant and resistant cells. Cells were cultured in glass bottom slide chambers with RPMI1640 + 10 % FBS, with MK-2206 (resistant sublines)/without MK-2206 (non-resistant cells) overnight. A 50 μ m scale is indicated (Olympus Fluoview fv1000, DIC acquisition, \times 40). **c** MK-2206 showed less inhibition in the proliferation of MK-2206-resistant sublines than in the non-resistant cells. Indicated cells were cultured in RPMI1640 + 10 % FBS with MK-2206 at indicated concentrations. Cell growth was evaluated as cell numbers at indicated hours, and it was repeated three times. Data are expressed as the mean (\pm SD). * $P < 0.01$

Fig. 2 MK-2206 showed less inhibition in cell growth of MK-2206-resistant sublines. **a** MK2206 suppressed cell growth in a dose dependent method, and MK-2206-resistant sublines maintained resistance after 2-week

withdrawal of MK-2206. Indicated cells were cultured in RPMI1640 + 10 % FBS with MK-2206 at the indicated concentrations. Cell growth was evaluated as cell numbers at 72 h, and it was repeated three times. Data are expressed as the mean (\pm SD). **b** IC50 of MK-2206 in indicated cells. **c** The effect of MK-2206 on cell cycle phase distribution. LAN-1 and LAN-1-MK were treated with/without MK-2206 (5 μ M) in RPMI1640 with 10 % FBS for 12 h followed by analysis of cell cycle phase distribution, as introduced in "Methods". Cells were stained with propidium iodide (PI) for 30 min followed by FACSscan flow cytometer. **d** Column chart of cell cycle distribution in c

Fig. 3 Effect of GSK2334470 (GSK), PDK1 inhibitor, in MK-2206-resistant sublines compared with non-resistant cells. **a** Indicated cells were treated with GSK at indicated concentrations, with/without MK-2206 (5 μ M) in RPMI1640 + 10 % FBS. Cell growth was evaluated as cell numbers at 72 h, and it was repeated three times. Data are expressed as the mean (\pm SD). **b** IC50 of GSK in indicated cells. **c** The effect of GSK on cell cycle phase distribution in LAN-1 and LAN-MK. LAN-1 and LAN-1-MK were treated with GSK (5 μ M) with/without MK-2206 (5 μ M) in RPMI1640 with 10 % FBS for 12 h followed by analysis of cell cycle phase distribution, as introduced in "Methods". Indicated cells were stained with PI for 30 min followed by FACSscan flow cytometer

Fig. 4 Effect of AZD8055 (AZD), mTOR inhibitor, in MK2206 resistant sublines compared with non-resistant cells. **a** Indicated cells were treated with AZD at indicated concentrations, with/without MK-2206 (5 μ M) in RPMI1640 + 10 % FBS. Cell growth was evaluated as cell numbers at 72 h, and it was repeated three times. Data are expressed as the mean (\pm SD). **b** IC50 of AZD in indicated cells. **c** The effect of AZD on cell cycle phase distribution in LAN-1 and LAN-MK. LAN-1 and LAN-1-MK

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were treated with AZD (50 nM) with/without MK-2206 (5 μ M) in RPMI1640 with 10 % FBS for 12 h followed by analysis of cell cycle phase distribution, as introduced in "Methods". Indicated cells were stained with PI for 30 min followed by FACScan flow cytometer

Fig. 5 Effect of GSK2334470 (GSK) on PDK1-mTOR-S6K axis in MK-2206-resistant sublines. **a–d** After 1 h serum starvation, indicated cells were incubated in RPMI1640 + 10 % FBS with/without MK-2206 (5 μ M) or GSK (5 μ M). Phosphorylation of PDK1, AKT, mTOR, and S6K were detected by western blot at 1.5 and 12 h, so were AKT and Actin. GSK3 β , p-GSK3 β and N-MYC were also detected

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