Direct effects of phenformin on metabolism/bioenergetics and viability of SH-SY5Y neuroblastoma cells

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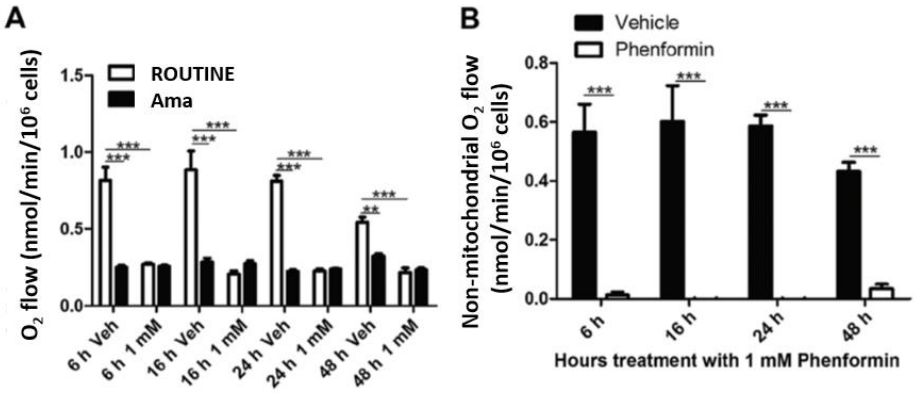

Figure 1. Time-dependent inhibition of O_2 consumption in SH-SY5Y cells. Cells were treated with vehicle or phenformin and placed in the O2k containing F12 Dulbecco's modified Eagle's media. **A.** ROUTINE respiration. **B.** Non-mitochondrial respiration (ROX) within SH-SY5Y cells. Data is represented as the mean ± standard error. *p<0.05, **p<0.001, ***p<0.0001.

Inhibition of mitochondrial Complex I of SH-SY5Y cells by phenformin

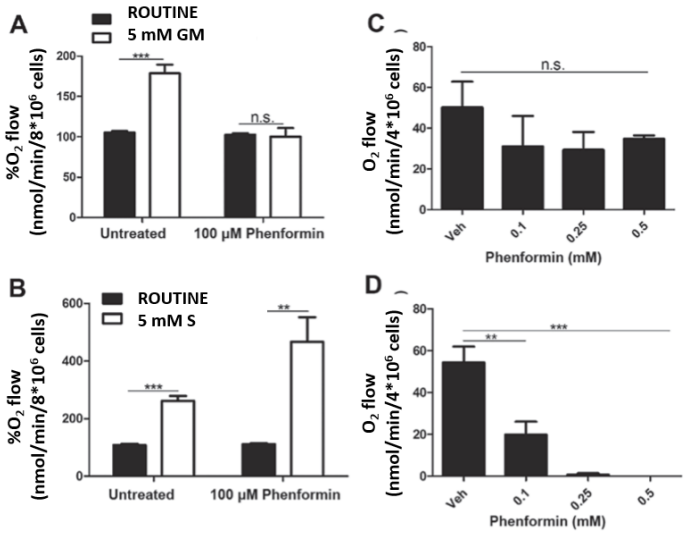

Figure 2. Identification of Complex I as the target of phenformin inhibition in mitochondrial O_2 consumption. O_2 consumption in SH-SY5Y cells was measured using **A.** NADH-linked substrates glutamate/malate (GM) or **B.** succinate (substrate for complex II) in the presence and absence of phenformin. Independently, ROUTINE respiration was measured in SH-SY5Y cells treated with phenformin transfected with **C.** an empty vector GFP tagged pAAV-MCS plasmid or **D.** a pAAV-MCS plasmid encoding humanised Ndi1 (NADH:ubiquinone oxidoreductase). n.s., not significant. Data is represented as the mean ± standard error. *p<0.05, **p<0.001, ***p<0.0001.

Phenformin inhibits NADH- but not succinate-linked mitochondrial respiration

Reference: Geoghegan F, Chadderton N, Farrar GJ, Zisterer DM1, Porter RK (2017) Direct effects of phenformin on metabolism/bioenergetics and viability of SH-SY5Y neuroblastoma cells. Oncol Lett 14:6298-306.

Figures and text slightly modified based on the recommendations of the COST Action MitoEAGLE CA15203. Doi:10.26124/mitofit:190001.v4