Supporting information

Combination of copper metallodendrimers with conventional antitumor drugs to combat cancer in *in vitro* models

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The copper metallodendrimers with chloride and nitrate ligands were synthesized accordingly with previously published protocol (*Sanz Del Olmo, N., Maroto-Díaz, M., Gómez, R., Ortega, P., Cangiotti, M., Ottaviani, M. F., & de la Mata, F. J. (2017). Carbosilane metallodendrimers based on copper (II) complexes: Synthesis, EPR characterization and anticancer activity. Journal of inorganic biochemistry, 177, 211–218. https://doi.org/10.1016/j.jinorgbio.2017.09.023*). Its purity was evaluated by elemental analysis, nuclear magnetic resonance and mass spectrometry techniques.

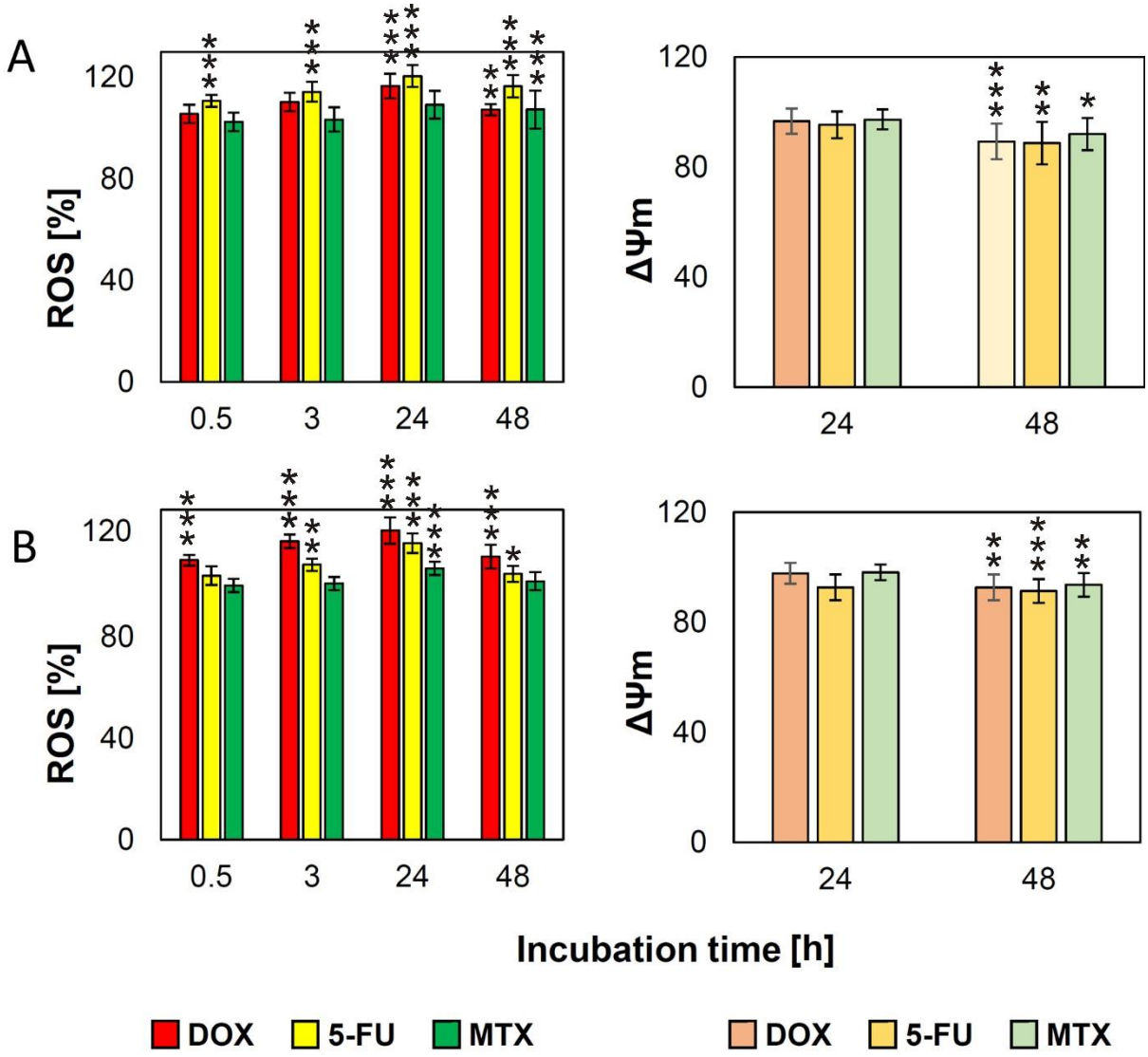

Figure S1. Time-dependent ROS production and changes in mitochondrial membrane potential (Ψm**)** in MCF7 – (A) or HEP G2 – (B) cells involved by anticancer drugs DOX, 5-Fu and MTX. ROS - fluorescent probe H_2DCFDA; ΔΨm - fluorescent probe 5,5′,6,6′-tetrachloro-1,1′,3,3′-tetraethylbenzimidazolylcarbocyanine iodide (JC-1), PBS 10 mmol/L, pH-7.4. Results are means ± SD, from a min. of 3 independent experiments. Statistically significant differences vs. control *p <0.05, **p < 0.01, ***p < 0.001.

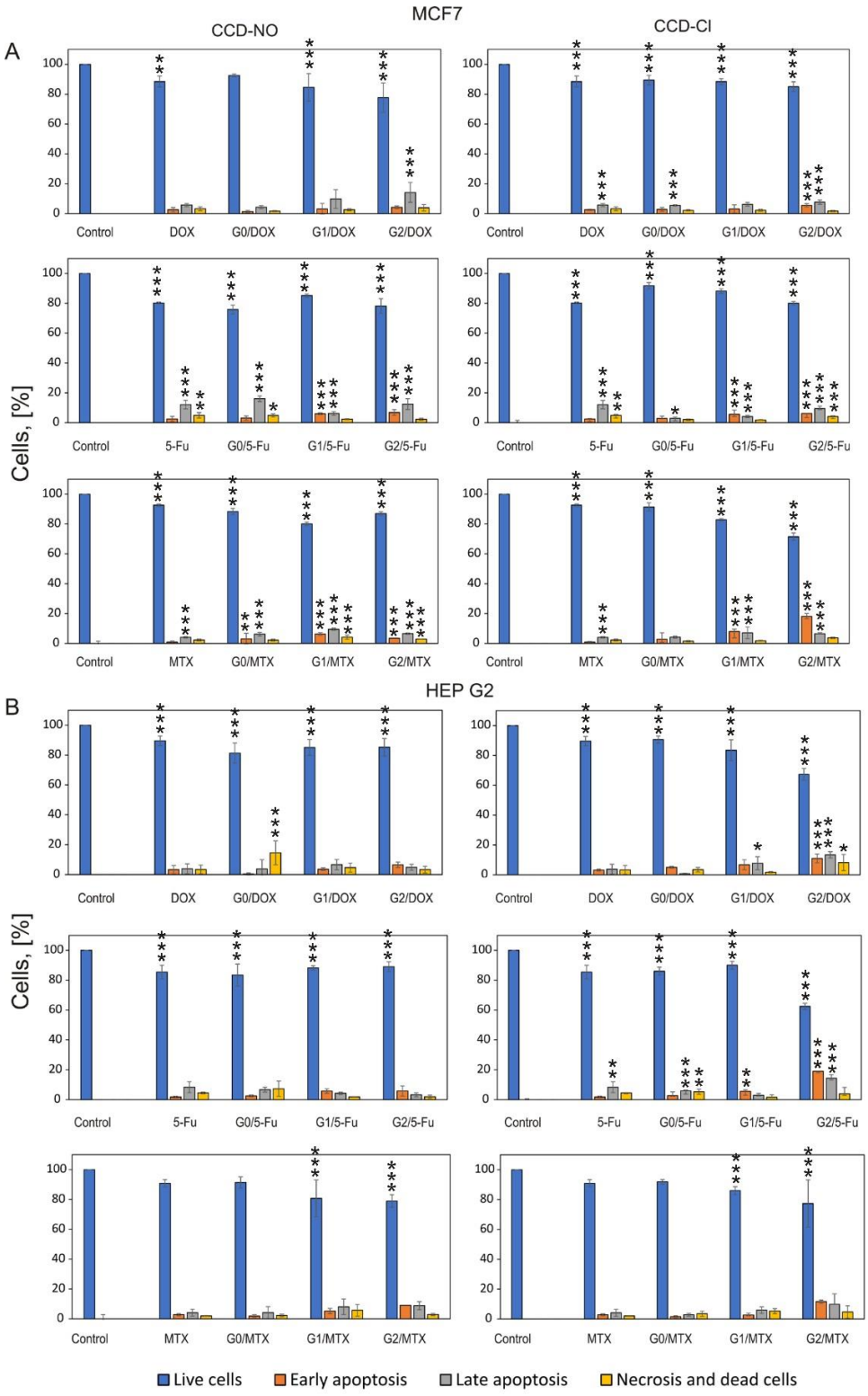

Figure S2. The percentages of cells in different phases and apoptosis profile evaluated by flow cytometry and measured using annexin V/propidium iodide staining in PBS 10 mmol/L, pH-7.4. MCF7 – (A) and HEP G2 – (B) cells were interacted with dendrimers, anticancer drugs or dendrimer drug complexes. Incubation time 24 h. The concentrations of drugs were as follows: DOX, 0.1 μmol/L (DOX/Dendrimer molar ratio 1:7); 5-FU, 1 μmol/L (5-FU/Dendrimer molar ratio 1:1); MTX, 2 nmol/L (MTX/Dendrimer molar ratio:

1:32). Results are means ± SD, from a min. of 3 independent experiments. Statistically significant differences vs. control *p <0.05, **p < 0.01, ***p < 0.001.