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MGBG–cisplatin combination chemotherapy against breast cancer

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Worldwide, it is estimated that more than one million women are diagnosed with breast cancer every year, representing 14% of female cancer deaths [1], about 4,500 new cases being detected each year in Portugal. In the present study, the compound metylglyoxal bis(guanylhydrazone) (MGBG) [2], an inhibitor of S-adenosyl-L-methionine descarboxylase (SAMdc), was investigated as a potencial anti-cancer agent towards the breast cancer cell line MCF-7 and the non-carcinogenic, non-immortalized, human foreskin fibroblast cells BJ. The results (MTT assay) evidenced that the effect of MGBG against the MCF-7 cells is dose and time dependent, revealing a significant cell viability loss (*ca.* 90% at 72 h, for a 50 μM dosage). Since its effect was not shown to be reversible, this compound appears to be quite effective in this line. In fact, compared to cisplatin (cDDP), a commonly used drug in clinical practice, MGBG provided a larger cytotoxicity in the same concentration range. Similarly, a slight synergistic effect was verified for these two compounds – *ca.* 93% at 72 h, for an MGBG(50 μM):CDDP(10 μM) combination, while no effect was assessed on the reversibility of the cytotoxic action. Regarding the non-neoplastic BJ line, MBGB exhibited a clear reversibility of et growth-inhibiting effect, as opposed to cDDP and the MGBG:cDDP cocktails.

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References

1. Coughlin SS, Ekwueme DU: **Breast cancer as a global health concern.** *Cancer Epidemiol* 2009, **33**:315-318.
2. Marques MPM, Gil FPSC, Calheiros R, Battaglia V, Brunati AM, Agostinelli E, Toninello A: **Biological activity of antitumoural MGBG: the structural variable.** *Amino Acids* 2008, **34**:555-564.

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