博莱霉素 A5 对体外培养中国仓鼠卵巢细胞增殖周期的影响

博莱霉素 A5 (Neomycin A5) 是一种具有高度细胞毒性的抗肿瘤药物。它在临床上主要用于治疗多种类型的肿瘤。博莱霉素 A5 可以抑制肿瘤细胞的增殖，通过诱导细胞的死亡来达到治疗的效果。

研究方法

在本实验中，我们使用中国仓鼠卵巢细胞系 (CHO) 进行实验。首先，我们将博莱霉素 A5 按照一定浓度加入细胞培养液中，观察细胞的生长情况。然后，我们检测细胞周期的各个阶段，包括G0/G1、S、G2/M 期的细胞数量变化，以及细胞的增殖和死亡情况。

实验结果

实验结果显示，博莱霉素 A5 可以显著抑制 CHO 细胞的增殖，主要作用在 S 期和 G2/M 期，从而减少细胞的分裂。

结论

博莱霉素 A5 是一种有效的抗肿瘤药物，能够抑制肿瘤细胞的增殖。未来的研究可以进一步探索博莱霉素 A5 的作用机制，以期开发出更有效的治疗方案。

参考文献


Fig 1. Effect of bloemycin A5 (100 µg/ml) on the cell cycle progression of Chinese hamster ovary (CHO) cells by microfluorometry.

Fig 2. Effect of bloemycin A5 and bloemycin on the cell cycle of CHO cells after 16 h by flowcytometry. (A) Control; (B) Bloemycin 100 µg/ml; (C) Bloemycin A5 100 µg/ml.

Fig 3. Cell cycle analysis of control (A), bloemycin-treated (B) and bloemycin A5-treated (C) CHO cells. The exponential growth cells were plated in 3 culture flasks per day. After 8 h, tissue culture medium was added to all the flasks. Bloemycin or bloemycin A5 100 µg/ml was added to the flasks. Labeled index (LI) = labeled mitotic index (LM) / total mitotic index (TM).

DNA flow cytometry 4-8(意断值) for a fraction of a population of G0/G1 phase cells. In the G0 phase of G2 + M phase cells, this ratio is for G0 phase cells. When the time of the CHO cell cycle is considered, the G0 phase occupies most of the cell cycle. When G2 + M ratio decreases, the percentage of the G0 phase increases. This is consistent with the results shown in the figure.

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**Discussion**

Bloemycin A5 and bloemycin A5 both induced cell cycle arrest in CHO cells. The G0 phase arrested cells showed typical characteristics of G0 arrest. The cell cycle progression was blocked at the G2/M phase. The percentage of G2/M phase cells increased, while the percentage of G1 phase cells decreased. This is consistent with the results shown in the figure.

**Conclusions**

The results of this study suggest that bloemycin A5 and bloemycin A5 both induce cell cycle arrest in CHO cells. The cell cycle progression was blocked at the G2/M phase, resulting in an increase in the G2/M phase cell population and a decrease in the G1 phase cell population. This is consistent with the results shown in the figure.
Fig 4. Effects of bleomycin and bleomycin A5 on the transition of CHO cells from S to G2 phase. CHO cells in exponential growth were plated in 3 cm dishes and rinsed with 0.1 M PBS to remove any non-adherent cells. Vials were then incubated at 37°C for 2 h to allow the cells to remain attached to the dishes. Bleomycin A5 or bleomycin 10 μg/mL was then added. After 2 h, the cells were washed with 0.1 M PBS and incubated for 1 h to allow the drug to diffuse into the cells. The cells were then harvested and the DNA content was determined by flow cytometry.

**Effects of Bleomycin A5 on Cell Cycle in Chinese Hamster Ovary Cells**

XUE Shao-bai, CHENG Zhi-hua*, LIU CHENG Ru-xuan, HU Yun-ying, XU Pu

**ABSTRACT**

The effect of bleomycin A5 on the cell cycle of Chinese hamster ovary cells was studied by microphotometry, flow cytometry, and cell cycle analysis. The progress of G2 phase was not affected by bleomycin A5, but the cells were blocked in the G2 phase.

**KEY WORDS** bleomycin A5; cell cycle; G2 phase block; Chinese hamster ovary cells

*Beijing Medical College*