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## MR分子成像评价壁虎活性单体对人肺腺癌SPC细胞的作用

### MR molecular imaging in evaluation on the effect of Gecko swinhonis active monomer on human lung adenocarcinoma SPC cells in vitro

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中文摘要:

目的 利用前期制备的超微超顺磁性氧化铁(USPIO)标记的含有精氨酸-甘氨酸-天冬氨酸(RGD)序列的环肽探针(RGD-USPIO分子探针)进行MR成像,评价壁虎活性单体BH1273209对腺癌SPC细胞的作用效果。方法 将SPC细胞接种于6孔板中培养24 h,分为实验组和对照组,分别加入1 mg/ml的BH1273209和培养液,培养48 h后加入含铁浓度25  $\mu$ g/ml的RGD-USPIO培养1行普鲁士蓝染色。将细胞重悬于1%琼脂糖凝胶中,置于Eppendorf管内进行MR扫描。结果 随浓度增加,BH1273209对SPC细胞的抑制作用增强,1 mg/ml时抑瘤率最高;铁浓度为25  $\mu$ g/ml时USPIO探针对SPC细胞活性无明显影响。对照组SPC细胞内可见较多蓝染颗粒,实验组SPC细胞内未见明显的蓝染颗粒。T2WI中,实验组的SNR( $132.26 \pm 17.24$ )较对照组( $4.89 \pm 3.35$ )明显增高( $P < 0.01$ )。结论 MR分子成像可简便、准确地评价BH1273209对SPC细胞的作用效果;BH1273209使SPC细胞结合RGD-USPIO明显减少,推测其通过抑制整合素配体-受体结合而发挥抗肿瘤作用。

英文摘要:

**Objective** To proceed molecular MRI with RGD sequence-ultrasmall superparamagnetic iron oxid (RGD-USPIO) prepared previously, and to evaluate the effect of Gecko swinhonis active mono BH1273209 on human lung adenocarcinoma SPC cell. **Methods** The effect of different concentrations of BH1273209 and RGD-USPIO on SPC cells by MTT assay was surveyed. Then the optimum densities of BH1273209 and RGD-USPIO were groped to base for experiment in vitro. SPC cells were cultured 24 h in 6-well plates conventionally, and divided into experimental group and control g in which BH1273209 of 1 mg/ml and 1640 medium was added to SPC cells respectively. The cells were cocultured for 48 h, then RGD-USPIO with 25  $\mu$ g/ml was added to cells and cocultured for 1 The cells were resuspended in 1% agarose gel placed in Eppendorf tube, and proceeded MR scanning. **Results** Inhibitory effect of BH1273209 on SPC cells raised with the concentration of BH12732 increased. The inhibitory effect of BH1273209 of 1 mg/ml was the maximum. There was no effect of RGD-USPIO probe with 25  $\mu$ g/ml on SPC cells activity. There were many blue-stain grana in S cells of control group, but no blue-stain grana in SPC cells of experimental group. SNR of experimental group ( $132.26 \pm 17.24$ ) was significantly higher than that of control group ( $4.89 \pm 3.35$ ,  $P < 0.01$ ) **Conclusion** MR molecular imaging can conveniently and accurately evaluate the anti-tumor effect of BH1273209 on SPC cells. RGD-USPIO molecular probe combined with SPC cells is lessened aft adminiatration of BH1273209, speculating that BH1273209 may develop anti-tumor effect through inhibit the binding of integrin ligand and its receptor.

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