

新藤黄酸对HepG2裸小鼠移植瘤的抗肿瘤作用与MAPK信号转导通路的关系

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中文摘要:目的:研究新藤黄酸(neo-gambogic acid, NGA)对HepG2裸小鼠移植瘤的体内抗肿瘤作用及其机制。方法:采用HepG2裸小鼠移植瘤模型,造模7d后将模型动物随机分为5组,即荷瘤对照组,阳性对照组(5-FU 10.0 mg · kg⁻¹), NGA高、中、低剂量组(分别为8.0, 4.0, 2.0 mg · kg⁻¹),隔天ip给药1次,给药7次后处死动物,分离肿瘤,测量肿瘤体积,称瘤重,计算相对肿瘤体积和抑瘤率,并将肿瘤组织切片,采用免疫组化法,检测实体瘤组织的Bax, Bcl-2, p-ERK1/2, p-MEK1/2蛋白的表达情况。结果:NGA高、中、低剂量组的平均瘤重均明显低于荷瘤对照组(1.29 ± 0.24)g, NGA高剂量组的抑瘤率为83.75%, 高于阳性对照药5-FU的抑瘤率46.54% (P < 0.05); Bax表达量呈剂量依赖性升高, Bcl-2表达量呈剂量依赖性降低; NGA给药组p-ERK1/2和p-MEK1/2的表达量均明显低于荷瘤对照组 (P < 0.05)。结论:NGA对HepG2裸小鼠移植瘤具有确切的体内抗肿瘤作用,其作用机制与上调Bax/Bcl-2比值而诱导实体瘤细胞凋亡及下调丝裂原活化蛋白激酶(mitogen-activated protein kinase, MAPK)信号转导通路的磷酸化水平密切相关。

中文关键词:[新藤黄酸](#) [抗肿瘤](#) [裸小鼠](#) [凋亡](#) [丝裂原活化蛋白激酶](#)

Anti-tumor Effects of Neo-gambogic Acid on Hep G2 Xenografts in Nude Mice Correlated with MAPK Signal Transduction Pathway

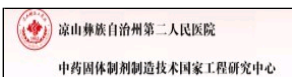
Abstract: Objective: To study the anti-tumor effect of neo-gambogic acid (NGA) on Hep G2 xenograft in nude mice *in vivo* and its mechanism.

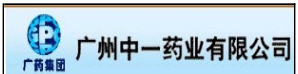
Method: Sixty healthy BALB/c-nu mice, transplanted by Hep G2 hepatocarcinoma cells, were divided into 5 groups, including model group, 5-FU (10.0 mg · kg⁻¹) group and three groups of neo-gambogic acid in high dose, middle dose and low dose (8.0, 4.0, 2.0 mg · kg⁻¹). The mice were executed after fourteen days of treatment every other day (*qod*) and tumor tissues were excised. The size of tumor tissues was measured and tumor inhibition rate was calculated. Immunohistochemistry was used to detect the expressions of Bax, Bcl-2, p-ERK1/2 and p-MEK1/2. **Result:** the tumor weight of NGA groups was reduced remarkably compared with control group. The tumor inhibition rate of NGA high-dose (8.0 mg · kg⁻¹) group was 83.75%, which excelled the tumor inhibition rate of the 5-FU (10.0 mg · kg⁻¹) group (46.54%, P < 0.05). The expression of Bax was up-regulated by NGA dose dependently while the expression of Bcl-2 was down-regulated. The expressions of p-ERK1/2 and p-MEK1/2 in NGA groups were reduced remarkably compared with control group (P < 0.05). **Conclusion:** NGA exerts exact anti-tumor effect on Hep G2 xenograft in nude mice *in vivo*. Its mechanism correlates with that the cells in Hep G2 xenograft are induced apoptosis via up-regulating the Bax/Bcl-2 ratio and that the phosphorylation level of mitogen-activated protein kinase (MAPK) signal transduction pathway is down-regulated.

keywords: [neo-gambogic acid](#) [anti-tumor](#) [nude mice](#) [apoptosis](#) [MAPK](#)

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