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Nrf2信号通路在各系统肿瘤中的研究进展

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摘要: 活性氧自由基(ROS)可以损伤细胞DNA和蛋白质, 具有致癌作用。Nrf2可以激活人体内多种其活性主要由Keap1负性调节, 当机体受到外界药物、射线等刺激时, Nrf2可激活ARE区域, 介导保护细胞的作用, 目前已有部分研究表明某些植物与药物通过Nrf2信号通路发挥抗癌作用。近期, 表明Nrf2同样具有致癌作用, 肿瘤细胞通过Nrf2或Keap1突变与基因杂合性丢失, 使Nrf2和Keap1 Nrf2在胞内积累, 激活下游基因, 增加肿瘤细胞内的解毒酶, 从而增强细胞对放化疗的抵抗性。人体的大部分消化系统、呼吸系统、生殖系统及神经系统肿瘤中均呈高表达, 并与多种致癌基因Raf、Myc、BRCA1等基因表达相关, 阻断Nrf2信号通路的抗癌药物研究已表明其能够减少肿瘤复发治疗药物的敏感性。Nrf2参与着各个系统众多肿瘤的发生与发展, 将成为未来肿瘤靶向治疗的重点

关键词: 氧化性应激; 抗药性, 肿瘤; 肿瘤, 实验性; 肿瘤标记, 生物学; NF-E2相关因子2

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