Aberration of Nrf2–Bach1 pathway in colorectal carcinoma; role in carcinogenesis and tumor progression

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Abstract:

Nrf2 and Bach1 are important transcriptional factors that protect against reactive oxygen species (ROS). Although aberration of these molecules was associated with malignant transformation and progression, their aberration pattern in colorectal carcinoma (CRC) is not yet fully studied. In this study, Nrf2 and Bach1 were immunohistochemically examined in 93 formalin-fixed paraffin-embedded blocks of colonic tumors (65 carcinoma with their corresponding surgical margins and 28 adenomas). Nrf2 expression was gradually increased in the apparently normal mucosa (57 ± 41)-adenoma (90 ± 36)- carcinoma (198 ± 78) direction and only showed significant higher mean of expression in CRC with brisk inflammatory peritumoral response. The mean of Bach1 expression was highest in apparently normal colonic mucosa (267 ± 16), lowest in adenoma (53 ± 31) and high in carcinoma tissues (194 ± 93). Significant higher mean of expression was detected in carcinoma with: LN metastasis (p = 0.04), lymphovascular invasion (p = 0.024); perineural invasion (p = 0.03) and advanced pathological stage (p

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