Title

Epigenetic modulation of cytokine expression in gastric cancer: influence on angiogenesis, metastasis and chemoresistance

Abstract

Cytokines are proteins that act in the immune response and inflammation and have been associated with the development of some types of cancer, such as gastric cancer (GC). GC is a malignant neoplasm that ranks fifth in incidence and third in cancer-related mortality worldwide, making it a major public health issue. Recent studies have focused on the role these cytokines may play in GC associated with angiogenesis, metastasis, and chemoresistance, which are key factors that can affect carcinogenesis and tumor progression, quality, and patient survival. These inflammatory mediators can be regulated by epigenetic modifications such as DNA methylation, histone protein modification, and non-coding RNA, which results in the silencing or overexpression of key genes in GC, presenting different targets of action, either direct or mediated by modifications in key genes of cytokine-related signaling pathways. This review seeks insight into the relationship between cytokine-associated epigenetic regulation and its potential effects on the different stages of development and chemoresistance in GC.

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Index Keywords

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transition; gene expression; gene silencing; genetic transcription; genotype; Helicobacter pylori; histone modification; hypoxia; immune response; immune system; in vitro fertilization; inflammation; intestinal metaplasia; mesenchymal stem cell; metastasis; mortality; nonhuman; nuclear reprogramming; nucleosome; overall survival; protein modification; public health; risk factor; Short Survey; signal transduction; stomach cancer; tumor growth; tumor invasion; tumor microenvironment; tumor suppressor gene; Wnt signaling; angiogenesis; drug resistance; genetic epigenesis; genetics; human; metabolism; stomach tumor

Chemicals/CAS

chemokine receptor CXCR4, 188900-71-2; collagenase 3, 175449-82-8; epidermal growth factor receptor, 79079-06-4; epidermal growth factor receptor 2, 137632-09-8; interleukin 8, 114308-91-7; toll like receptor 4, 203811-83-0; vasculotropin, 127464-60-2; Cytokines,

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