Abstract

Chronic inflammation induced by biological, physical and chemical factors is associated with the risk of cancer for many different tissues, including the lungs, liver and the oral cavity. Nitric oxide (NO) and several cytokines, particularly proinflammatory cytokines, are produced during the chronic inflammatory process. NO is one of the most important cytotoxic proinflammatory compounds. It is catalyzed by nitric oxide synthase (NOS) and has been associated with carcinogenesis. Previous studies have revealed the expression patterns of NOS in cancer. NO is able to suppress cellular immunity and stimulate cell proliferation. This small molecule also plays a major role in tumor angiogenesis, as well as tumor cell migration, invasiveness and metastasis. The purpose of this narrative review is to describe the role of the tumor-promoting effect of NO, and conversely its potential applications in cancer therapy.

Keywords: nitric oxide, nitric oxide synthase, oxidative stress, carcinogenesis, angiogenesis, NO inhibitor