

文献综述

DNA聚合酶 θ 与肿瘤关系的研究进展

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摘要:

DNA聚合酶 θ (POLQ) 是DNA聚合酶A家族成员之一, 在肿瘤细胞和部分人体正常组织中高表达。POLQ通过参与DNA损伤耐受, 在维持人体细胞染色体稳定从而避免疾病的发生过程中起着重要的作用。同时POLQ因其低保真度的特性导致组织细胞突变易感性, 其表达异常增高及缺陷均可导致肿瘤等疾病的发生。笔者就目前关于POLQ参与损伤耐受的机制、低保真度导致突变易感性以及其在肿瘤发展中作用的研究进展作一综述。

关键词: 肿瘤/病理生理学; DNA聚合酶; RNA指导; 突变; 综述文献

Relationship between DNA polymerase θ and tumors: recent progress

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Abstract:

DNA polymerase θ (POLQ) is a member of the family A DNA polymerase, and is highly expressed in tumor cells and some normal human tissues. POLQ plays a critical role in maintenance of the chromosomal stability in human cells which thereby avoids the occurrence of diseases through its participation in DNA damage tolerance processes. Meanwhile, it is always the culprit for the increased mutation susceptibility of the tissue cells due to its characteristic low-fidelity, for either its abnormally high expression or defect can cause the occurrence of tumors or other diseases. This paper presents the recent progress concerning the mechanism underlying the POLQ involved DNA damage tolerance and its low-fidelity induced mutation susceptibility as well as its role in the occurrence and development of tumors.

Keywords: Neoplasm/pathophysiol DNA Polymerase RNA-Directed Mutation Review

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