

讲座

人钠碘同向转运体 (NIS) 在肿瘤治疗中的研究进展

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摘要 钠碘同向转运体 (sodium iodide symporter, NIS) 是一种间接激活甲状腺和少数几个非甲状腺腺体 (如有泌乳功能的乳腺) 摄取碘过程的内源性的细胞膜蛋白质。利用其分子克隆的特征, 我们可以研究其在甲状腺生理和在甲状腺良性及恶性疾病的病理生理及其在临床治疗中的重要作用。类似的, 超过80%的乳腺癌病人体内都表达NIS, 阐明其根本机制可能将促使此类疾病在病理生理学和临床治疗方面的重大发现。在将来, 我们可能通过两种方法达到利用放射性¹³¹I治疗甲状腺癌及非甲状腺肿瘤的目的。一种是基于重新诱导内源性NIS基因在乳腺癌和甲状腺癌表达, 针对肿瘤转移和去分化的机制对肿瘤进行治疗; 另一种是采用NIS的新型细胞减少性的基因治疗战略。NIS具有的独一无二的优势可以同时作为受体和治疗基因。正如在分化型甲状腺癌放射性碘治疗中一样, 即¹³¹I对其他肿瘤进行显像、监测和治疗得以实现。

关键词

分类号

The progression in therapy of tumor with the human sodium iodide symporter

Abstract The sodium iodide symporter (NIS) is an intrinsic plasma membrane protein that mediates active iodide transport into the thyroid gland and several extrathyroidal tissues, in particular the lactating mammary gland. Cloning and molecular characterization of the NIS have allowed the investigation of its key role in thyroid physiology as well as its potential pathophysiological and therapeutic implications in benign and malignant thyroid diseases. Similarly, elucidating the mechanisms underlying the regulation of NIS in lactating mammary gland and breast cancer, in which more than 80% of cases express endogenous NIS, may lead to findings that have novel implications for pathophysiology and therapy. Two approaches may, in the future, pave the way to extend the use of radioiodide treatment to thyroid cancer and nonthyroidal cancer. One is based on the reinduction of endogenous NIS expression in thyroid and breast cancer by targeting the main mechanisms involving tumoral transformation and dedifferentiation to treat the tumor. The other is based on the application of NIS as a novel cytoreductive gene therapy strategy. NIS offers the unique advantage that it can be used both as a reporter and as a therapeutic gene, so that it is possible to image, monitor, and treat the tumor with radioiodide, just as in differentiated thyroid cancer.

Key words

DOI

扩展功能

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