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Name of Journal: *World Journal of Gastroenterology***Manuscript NO:** 56453**Manuscript Type:** ORIGINAL ARTICLE***Retrospective Study***

Insulin receptor substrate 1 may play divergent roles in human colorectal cancer development and progression

Karolina Lomperta, Katarzyna Jakubowska, Malgorzata Grudzinska, Luiza Kanczuga-Koda, Andrzej Wincewicz, Eva Surmacz, Stanislaw Sulkowski, Mariusz Koda

Abstract**BACKGROUND**

Despite effective prevention and screening methods, the incidence and mortality rates associated with colorectal cancer (CRC) are still high. Insulin receptor substrate 1 (IRS-1), a signaling molecule involved in cell proliferation, survival and metabolic

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Apr 27, 2012 · Colorectal cancer (CRC) is associated with lifestyle factors that affect insulin/**IGF signaling**, of which the insulin receptor substrate 1 (**IRS1**) is a key transducer. We investigated expression, localization and pathologic correlations of **IRS1** in **cancer-uninvolved colonic epithelium**, primary CRCs with paired **liver metastases** and in vitro polarizing Caco2 and HT29 ...

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In addition, I would like to propose that **IRS-1** may have a more **general role in cancer**, and could be considered as a protein having the opposite effect of tumor suppressors, a sort of anti-tumor suppressor molecule. The **insulin receptor substrate-1 (IRS-1)** promotes cell transformation

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The insulin receptor substrate (IRS) proteins

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Jun 01, 2011 · Jackson JG, White MF, Yee D. **Insulin receptor substrate-1** is the predominant signaling molecule activated by insulin-like **growth factor-I**, **insulin** and **interleukin-4** in **estrogen receptor-positive human breast cancer cells**.

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Insulin Receptor Substrate-1 Suppresses ... - Cancer Research

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Sep 15, 2009 · **Insulin receptor substrate-1 (IRS-1)** is a member of the **insulin receptor substrate**



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Insulin promotes progression of colon cancer by ...

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May 24, 2018 · These results indicate that **insulin may play** an important **role in colorectal carcinogenesis** . When **insulin binds** to its **receptor**, PI3K pathways can be activated and **cause cell proliferation** and survival. **Polymorphism of insulin gene** and its association with **colorectal cancer** were demonstrated by some studies .

Cited by: 5 **Author:** Xin Chen, Huiling Liang, Qibin Song, Ximi...
Publish Year: 2018

Novel insulin receptor substrate 1 and 2 variants in ...

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3810354>

Insulin, insulin-like growth factor 1 and 2 (IGF-1 and IGF-2) and IGF binding protein (IGFBP) are involved in cell growth and survival and are thought to be implicated in **colorectal cancer** (CRC). The **insulin receptor substrates** (IRS) are cytoplasmic signaling adaptor proteins that function as intermediates of the **insulin receptor** (IR) and IGF-IR (1).

Cited by: 3 **Author:** Diana Liberata Esposito, Fabio Verginelli,...
Publish Year: 2013

Insulin Receptor Substrate-1 Suppresses ... - Cancer Research

<https://cancerres.aacrjournals.org/content/69/18/7180>

Sep 15, 2009 · We investigated the regulatory effect of **insulin receptor substrate-1** (IRS-1) on transforming growth factor- β 1 (TGF- β 1)-induced epithelial-mesenchymal transition (EMT). TGF- β 1-induced EMT and cell migration in A549 cells are associated with a decrease in IRS-1 tyrosine phosphorylation and protein levels. Tissue microarray analysis of **human** lung carcinoma shows a ...

Cited by: 35 **Author:** Jian Shi, Dong-Mei Wang, Chun-Mei Wan...
Publish Year: 2009

The insulin-like growth factor system and cancer ...

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In fact, the circulating levels of **human** IGF-II are consistently several-fold higher than that of IGF-I, which is consistent with the concept that IGF-I and IGF-II have potentially **divergent roles in human** physiology . 3. The IGF **receptors** 3.1. IGF and **insulin receptors**

Cited by: 1498 **Author:** Derek LeRoith, Charles T. Roberts
Publish Year: 2003

Insulin Receptor Substrate Regulation of Phosphoinositide ...

<https://clincancerres.aacrjournals.org/content/17/2/206>

Jan 15, 2011 · **Insulin receptor substrates** (IRS) serve as downstream messengers from activated **cell surface receptors** to numerous **signaling pathway cascades**. **One** of these pathways, phosphoinositide 3-kinase (PI3K), frequently displays aberrant function in the setting of **cancer**.

Cited by: 56 **Author:** Heather E. Metz, A. McGarry Houghton
Publish Year: 2011

Divergent roles for IRS-1 and IRS-2 in breast cancer ...

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We supposed that **insulin receptor substrate-1** (IRS-1) may play a **significant role in pancreatic cancer invasion** and metastasis.

Insulin Receptor Substrate-1 (IRS-1) and IRS-2 expression ...

<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0220567>

The **insulin-like growth factor-1** (IGF-1) signaling pathway has been implicated in non-small cell lung **cancer** (NSCLC) outcomes and resistance to targeted therapies. However, little is known regarding the molecular mechanisms by which this pathway contributes to the biology of NSCLC. The **insulin receptor substrate** (IRS) proteins are cytoplasmic adaptor proteins that signal downstream of the IGF ...

[PDF] Expression and localisation of insulin receptor substrate ...

<https://gut.bmj.com/content/gutjnl/58/9/1250.full.pdf>

whose perturbations are implicated in **human colorectal** tumourigenesis. The **insulin/insulin-like growth factor** (IGF) signalling pathway **may play** an important **role** in intestinal epithelium homeostasis. **Insulin receptor substrate 2** (IRS2) is a poorly characterised component in this pathway. Methods: Using complementary in vitro and in vivo

Novel insulin receptor substrate 1 and 2 variants in ...

<https://www.spandidos-publications.com/10.3892/or.2013.2626>

Insulin, insulin-like growth factor 1 and 2 (IGF-1 and IGF-2) and IGF **binding protein** (IGFBP) are involved in cell growth and survival and are thought to be implicated in **colorectal cancer** (CRC).

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Insulin receptor substrate 1(**IRS1**) belongs to Insulin receptor substrates (**IRSs**) family which integrates and **coordinates hormone, cytokine, and growth factor signal**. **IRS1** is a **transforming ontogeny** which **induces transformation and metastasis** in **vitro** and in vivo.

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[The insulin receptor substrate \(IRS\) proteins](#)

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3142458>

Jun 01, 2011 · Jackson JG, White MF, Yee D. **Insulin receptor substrate-1** is the predominant signaling molecule activated by **insulin-like growth factor-I**, **insulin** and interleukin-4 in estrogen **receptor-positive human breast cancer** cells. J Biol Chem. 1998; 273:9994–10003.

Cited by: 98

Author: Leslie M. Shaw

Publish Year: 2011

[The insulin receptor substrate-1: A biomarker for cancer ...](#)

<https://www.sciencedirect.com/science/article/pii/S0014482708003959>

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Cited by: 69

Author: Renato Baserga

Publish Year: 2009

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Background. **Insulin receptor substrate 1 (IRS-1)** is an important molecule of the **insulin** signal transduction pathway and has been associated with the occurrence and **development** of many tumors, including hepatocellular carcinoma (HCC). Our study was designed to determine the expression and significance of **IRS-1 in human HCC** *Methods* Two hundred and forty specimens were drawn