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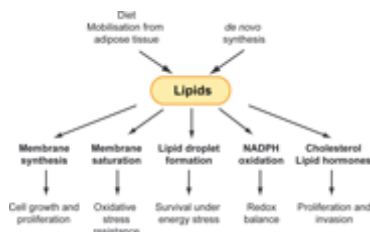
MINIREVIEW

Lipid metabolism in cancer

Claudio R. Santos, Almut Schulze

First Published: 3 July 2012

DOI: 10.1111/j.1742-4658.2012.08644.x



The availability of lipids in cancer cells is increased due to stimulation of *de novo* synthesis by oncogenic signalling and increased uptake from the blood stream. Lipids may contribute to several aspects of the tumour phenotype such as growth and proliferation or survival under oxidative and energy stress. Additionally, lipids also stimulate signalling pathways that lead to proliferation and invasion

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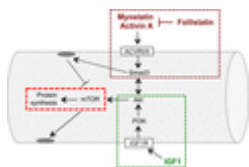
NEUROMUSCULAR AND MUSCLE DISEASES

Mechanisms regulating skeletal muscle growth and atrophy

Stefano Schiaffino, Kenneth A. Dyar, Stefano Ciciliot, Bert Blaauw, Marco Sandri

First Published: 17 April 2013

DOI: 10.1111/febs.12253



Muscle growth and atrophy reflect the balance between protein synthesis and protein degradation. Positive and negative regulators of muscle growth, such as the IGF1-Akt and the myostatin-Smad2/3 pathway, respectively, modulate the activity of mTOR and protein synthesis. Protein degradation via the proteasomal and autophagic-lysosomal systems is controlled by FoxO and NF- κ B transcription factors.

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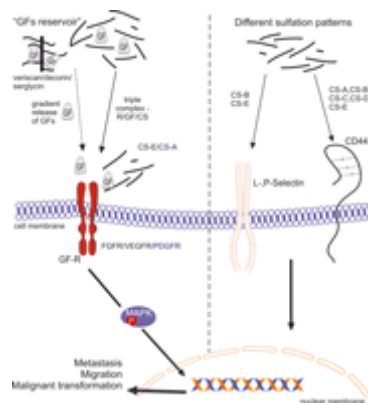
REVIEW ARTICLE

Glycosaminoglycans: key players in cancer cell biology and treatment

Nikos Afratis, Chrisostomi Gialeli, Dragana Nikitovic, Theodore Tsegenidis, Evgenia Karousou, Achilleas D. Theocharis, Mauro S. Pavão, George N. Tzanakakis, Nikos K. Karamanos

First Published: 12 March 2012

DOI: 10.1111/j.1742-4658.2012.08529.x



Glycosaminoglycans (GAGs), natural heteropolysaccharides, are among the key macromolecules that affect cell properties and functions. This review highlights their contribution in several steps of cancer cell signaling, growth and progression based on their fine structural characteristics, and the enzymes involved in their turnover. Prospects related to GAGs-based therapeutic targeting in cancer are also discussed

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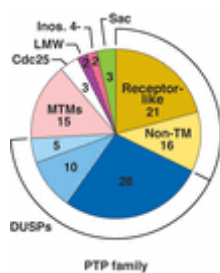
SPECIAL ISSUE

Protein tyrosine phosphatases – from housekeeping enzymes to master regulators of signal transduction

Nicholas K. Tonks

First Published: 17 January 2013

DOI: 10.1111/febs.12077



The protein tyrosine phosphatases (PTPs) are critical, specific regulators of signaling in their own right and serve an essential function, in a coordinated manner with the protein tyrosine kinases, to determine the response to a physiological stimulus. In this review I have discussed various aspects of the structure, regulation and function of the PTP family, which I hope will illustrate the fundamental importance of these enzymes to the control of signal transduction

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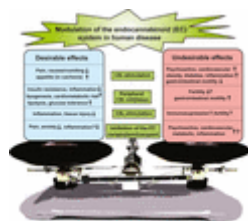
MINIREVIEW

Modulating the endocannabinoid system in human health and disease – successes and failures

Pál Pacher, George Kunos

First Published: 22 April 2013

DOI: 10.1111/febs.12260



Modulating the endocannabinoid system (ECS) holds therapeutic potential in a broad range of diseases affecting humans. However, the successful translation of preclinical findings to clinical practice depends on finding the right balance between desirable and undesirable consequences of targeting this system, and on precise understanding the pathological role of the ECS in various diseases and of endocannabinoid pharmacology.

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ORIGINAL ARTICLES

The major facilitator superfamily (MFS) revisited

Vamsee S. Reddy, Maksim A. Shlykov, Rostislav Castillo, Eric I. Sun, Milton H. Saier Jr

First Published: 8 May 2012

DOI: 10.1111/j.1742-4658.2012.08588.x

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NPS 324 GQFGLA8ITLTLVYDILG9EDTLL10TRAVFYAGARDERTQDFE11MA12ADGDA 373
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NPS 374 9IC10ELG11EL12LP13FPVYAFV14EGDAG15EGG16DTLE17SP18CH19NS20CF21LA22Y23FA24 424
NUP 308 9----10GI11FS12NP13CG14GG15FP16NS17AGAL18Y19GG20Q21TAL22DA23LY24SG25IT26Y27LA28TV29 352
NPS 425 IPAS11IT12Y13DA14Q15LA16IG17LE18Y19EL20 468
NUP 353 11LA12Y13FA14AL15ACAL16Y17NS18GG19Y20FG21RA22MA23IT24NS25GG26DA27Y28LA29 402
NPS 470 KPFY11Y12IA13DG14LA15IG16LE17Y18EL19 489
NUP 403 11LA12Y13FA14AL15ACAL16Y17NS18GG19Y20FG21RA22MA23IT24NS25GG26DA27Y28LA29 432

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In this article we probe the evolutionary origins of the major facilitator superfamily transporters, providing evidence that they arose from a single 2 TMS hairpin structure that triplicated to give a 6 TMS unit that duplicated to a 12 TMS protein, the most frequent topological type of these permeases.

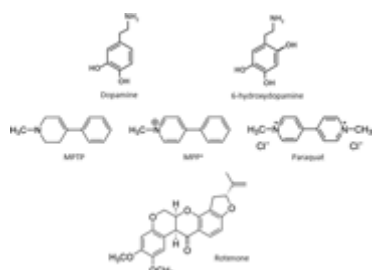
MINIREVIEW

Animal models of Parkinson's disease

Fabio Blandini, Marie-Therese Armentero

First Published: 28 February 2012

DOI: 10.1111/j.1742-4658.2012.08491.x



Indication to use toxic or transgenic models of Parkinson's disease (PD) depend on the objective being pursued. When testing new therapeutic agents, a reproducible nigrostriatal lesion, as that granted by agents with selective toxicity for dopaminergic neurons, will be required. If selected molecular mechanisms must be investigated, models reproducing gene mutations associated with familial PD will offer invaluable insights

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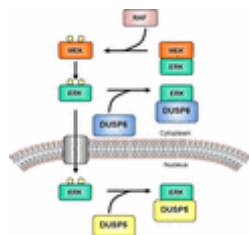
SPECIAL ISSUE

Dual-specificity MAP kinase phosphatases (MKPs): Shaping the outcome of MAP kinase signalling

Christopher J. Caunt, Stephen M. Keyse

First Published: 28 August 2012

DOI: 10.1111/j.1742-4658.2012.08716.x



Dual-specificity MAP kinase phosphatases (MKPs) are negative regulators of mitogen-activated protein kinases (MAPK). The regulated expression and biochemical properties of MKPs enables control of the duration, magnitude and localisation of MAPK activity and can also facilitate MAPK pathway crosstalk. In this review, we highlight the mechanisms by which individual MKPs exert spatiotemporal regulation of MAPK signaling and its cellular consequences.

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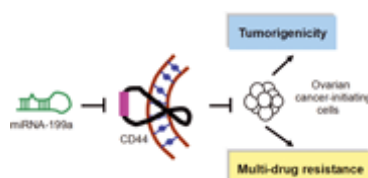
ORIGINAL ARTICLES

MicroRNA-199a targets CD44 to suppress the tumorigenicity and multidrug resistance of ovarian cancer-initiating cells

Weiwei Cheng, Te Liu, Xiaoping Wan, Yongtao Gao, Hui Wang

First Published: 24 April 2012

DOI: 10.1111/j.1742-4658.2012.08589.x



The experiments confirmed that miR-199a significantly affected cell cycle regulation and suppressed the proliferation and invasive capacity of ovarian CICs, and significantly increased the chemosensitivity of ovarian CICs to chemotherapeutic drugs *in vitro*. Furthermore, xenograft experiments

confirmed that miR-199a suppressed the growth of xenograft tumors formed by ovarian CICs *in vivo*. Thus, miR-199a may prevent tumorigenesis in human ovarian cancer.

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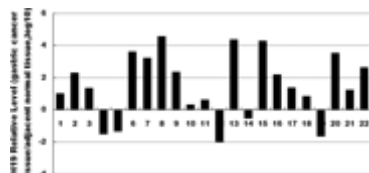
ORIGINAL ARTICLES

Up-regulated long non-coding RNA H19 contributes to proliferation of gastric cancer cells

Feng Yang, Jianwei Bi, Xuchao Xue, Luming Zheng, Kangkang Zhi, Jide Hua, Guoen Fang

First Published: 31 July 2012

DOI: 10.1111/j.1742-4658.2012.08694.x



The expression of long non-coding RNA H19 was markedly increased in gastric cancer cells and tissues compared with normal controls. In AGS human gastric cancer cell lines, ectopic expression of H19 increased proliferation, whereas H19-siRNA treatment contributed to apoptosis. H19 was associated with and partially inactivated p53. Thus, H19 seems to play an important role in gastric cancer and

has potential as a therapeutic

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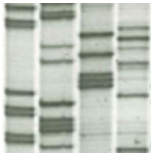
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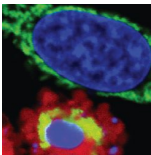
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 - ▶ *The FEBS Journal* supports rapid and open scientific communication. We have updated our author guidelines to clarify our policy on preprints.

 - ▶ The winner of the Richard Perham Prize has been announced - congratulations to Fatima Aloraifi of Trinity College Dublin! Read her winning paper.

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