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Manuscript Type: MINIREVIEWS

Monoacylglycerol lipase reprograms lipid precursors signaling in liver disease

Matteo Tardelli

Dietary oversupply of triglycerides represent the hallmark of obesity and connected complications in the liver such as non-alcoholic fatty liver disease and non-alcoholic steatohepatitis, which eventually progress to cirrhosis and hepatocellular carcinoma. Monoacylglycerol lipase is the last enzymatic step in the hydrolysis of triglycerides, generating glycerol and fatty acids (FAs), which are signaling precursors in physiology and disease. Notably, monoacylglycerol lipase (MGL) also hydrolyzes 2-arachidonoylglycerol, which is a potent ligand within the endocannabinoid system, into arachidonic

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Monoacylglycerol lipase controls endocannabinoid and ...

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CONCLUSIONS: **MAGL modulates hepatic injury** via **endocannabinoid and eicosanoid signaling**; blockade of this pathway protects mice from **liver injury**. **MAGL inhibitors** might be developed to treat conditions that expose the **liver** to oxidative stress and inflammatory damage.

Cited by: 96 **Author:** Zongxian Cao, Melinda M. Mulvihill, Par...
Publish Year: 2013

Monoacylglycerol Lipase Inhibition Protects From Liver ...

https://aasldpubs.onlinelibrary.wiley.com/doi/10.1002/hep.30929

Sep 10, 2019 · Monoacylglycerol lipase (MGL) is the last enzymatic step in triglyceride degradation, hydrolyzing monoglycerides into glycerol and **fatty acids** (FAs) and converting 2–arachidonoylglycerol into arachidonic acid, thus providing ligands for nuclear receptors as key regulators of **hepatic bile acid** (BA)/lipid metabolism and inflammation.

Author: Matteo Tardelli, Francesca V. Brusch... **Publish Year:** 2019

Monoacylglycerol lipase inhibitors: modulators for lipid ...

https://www.sciencedirect.com/science/article/pii/S2211383519305003

Monoacylglycerol lipase (**MAGL**) plays a crucial role catalysing the hydrolysis of **monoglycerides**. **MAGL inhibitors** have been considered as important agents in many therapeutic fields, including anti-nociceptive, **anti-inflammatory and anti-cancer**.

Author: Hui Deng, Weimin Li **Publish Year:** 2019

Monoacylglycerol Lipase - an overview | ScienceDirect Topics

https://www.sciencedirect.com/.../monoacylglycerol-lipase

Jonathan J. Lee, Daniel L. Simmons, in Handbook of Clinical Neurology, 2018. Cytosolic phospholipase A 2 and **monoacylglycerol lipase**. Cytosolic phospholipase A 2 (cPLA2) is a calcium-dependent enzyme that cleaves fatty acids, such as arachidonic acid, from phospholipids by hydrolyzing the SN-2 acyl bond (Leslie, 1997). Thus, inhibiting cPLA2 would deny PGHS

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BACKGROUND & AIMS: The **endocannabinoid and eicosanoid lipid signaling** pathways have important roles in inflammatory syndromes. **Monoacylglycerol lipase** (**MAGL**) links these pathways, hydrolyzing the endocannabinoid 2-arachidonoylglycerol to generate the **arachidonic acid precursor pool** for **prostaglandin production**.

Cited by: 96 **Author:** Zongxian Cao, Melinda M. Mulvihill, Parth…

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Author: Matteo Tardelli, Francesca V. Bruschi,… **Publish Year:** 2019

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Author: Matteo Tardelli, Francesca V. Bruschi, … **Publish Year:** 2019

FAT SIGNALS - Lipases and Lipolysis in Lipid Metabolism ...

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3314979

Mar 07, 2012 · Monoacylglycerol Signaling and **Lipolysis**. The signaling potential of **MGs** was recognized when it was found that the phospholipid-derived **MG 2-AG** activates **cannabinoid receptors** (CBR), thereby **regulating food intake**, **lipid metabolism**, and energy homeostasis.

Cited by: 718 **Author:** Rudolf Zechner, Robert Zimmermann, Th…
Publish Year: 2012

Therapeutic Potential of Monoacylglycerol Lipase Inhibitors

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3594462

Mar 19, 2013 · Recent studies have uncovered that the **serine hydrolase monoacylglycerol lipase** (**MAGL**) links the endocannabinoid and eicosanoid systems together through hydrolysis of the endocannabinoid 2-arachidonoylglycerol (2-AG) to provide the major arachidonic acid (AA) **precursor pools** for pro-inflammatory eicosanoid synthesis in specific tissues.

Cited by: 133 **Author:** Melinda M. Mulvihill, Daniel K. Nomura

Monoacylglycerol Lipase

Monoacylglycerol lipase, also known as MAG lipase, acylglycerol lipase, MAGL, MGL or MGLL is an enzyme that, in humans, is encoded by the MGLL gene. MAGL is a 33-kDa, membrane-associated member of the serine hydrolase superfamily and contains the classical GXSXG consensus sequence common to most serine hydrolases. The catalytic triad has been identified as Ser122, His269, and Asp239.

Wikipedia

Data from: Wikipedia

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