

Journal of Receptors and Signal Transduction >
Volume 28, 2008 - Issue 1-2

416 Views | 40 CrossRef citations to date | 0 Altmetric

Research Article

Metabolic Roles of the M₃ Muscarinic Acetylcholine Receptor Studied with M₃ Receptor Mutant Mice: A Review

DINESH GAUTAM, JONGRYE JEON, JIAN HUA LI, SUNG-JUN HAN, FADI F. HAMDAN, YINGHONG CUI, ... show all

Pages 93-108 | Published online: 10 Oct 2008

Cite this article <https://doi.org/10.1080/10799890801942002>

Sample our
Medicine, Dentistry, Nursing
& Allied Health Journals
>> [Sign in here](#) to start your access
to the latest two volumes for 14 days

[Full Article](#) [Figures & data](#) [References](#) [Citations](#) [Metrics](#)[Reprints & Permissions](#)[Read this article](#)

Abstract

The M₃ muscarinic acetylcholine (ACh) receptor (M₃ mAChR) is expressed in many central and peripheral tissues. It is a prototypic member of the superfamily of G protein-coupled receptors and preferentially activates G proteins of the G_q family. Recent studies involving the use of newly generated mAChR mutant mice have

About Cookies On This Site

We and our partners use cookies to enhance your website experience, learn how our site is used, offer personalised features, measure the effectiveness of our services, and tailor content and ads to your interests while you navigate on the web or interact with us across devices. You can choose to accept all of these cookies or only essential cookies. To learn more or manage your preferences, click "Settings". For further information about the data we collect from you, please see our [Privacy Policy](#).

Accept All

Essential Only

Settings

induced obesity and obesity-associated metabolic deficits. Under all experimental conditions tested, M₃ receptor-deficient mice showed greatly ameliorated impairments in glucose homeostasis and insulin sensitivity, reduced food intake, and a significant elevation in basal and total energy expenditure, most likely due to increased central sympathetic outflow and increased rate of fatty acid oxidation. These findings are of potential interest for the development of novel therapeutic approaches for the treatment of obesity and associated metabolic disorders.

🔍 Key Words: : Glucose homeostasis Insulin Knockout mice Muscarinic receptor Transgenic mice

Related research ⓘ

- People also read
- Recommended articles
- Cited by 40

Guidelines for the use and interpretation of assays for monitoring autophagy (3rd edition) >

Daniel J Klionsky et al.
Autophagy
Published online: 21 Jan 2016



Guidelines for the use and interpretation of assays for monitoring autophagy (4th edition)1 >

Daniel J. Klionsky et al.
Autophagy
Published online: 8 Feb 2021



About Cookies On This Site

We and our partners use cookies to enhance your website experience, learn how our site is used, offer personalised features, measure the effectiveness of our services, and tailor content and ads to your interests while you navigate on the web or interact with us across devices. You can choose to accept all of these cookies or only essential cookies. To learn more or manage your preferences, click “Settings”. For further information about the data we collect from you, please see our [Privacy Policy](#).

- Accept All
- Essential Only
- Settings

Information for

Authors
R&D professionals
Editors
Librarians
Societies

Opportunities

Reprints and e-prints
Advertising solutions
Accelerated publication
Corporate access solutions

Open access

Overview
Open journals
Open Select
Dove Medical Press
F1000Research

Help and information

Help and contact
Newsroom
All journals
Books

Keep up to date

Register to receive personalised research and resources by email

 Sign me up



Copyright © 2024 Informa UK Limited [Privacy policy](#) [Cookies](#) [Terms & conditions](#)



[Accessibility](#)

Registered in England & Wales No. 3099067
5 Howick Place | London | SW1P 1WG

About Cookies On This Site

We and our partners use cookies to enhance your website experience, learn how our site is used, offer personalised features, measure the effectiveness of our services, and tailor content and ads to your interests while you navigate on the web or interact with us across devices. You can choose to accept all of these cookies or only essential cookies. To learn more or manage your preferences, click “Settings”. For further information about the data we collect from you, please see our [Privacy Policy](#).

 Accept All

Essential Only

Settings