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**Manuscript NO:** 55615

**Manuscript Type:** REVIEW

**Mechanisms of action of neuropeptide Y on stem cells and its potential applications in orthopaedic disorders**

Wu JQ *et al.* Role of NPY on stem cells and applications

Jian-Qun Wu, Nan Jiang, Bin Yu

### Abstract

Musculoskeletal disorders are the leading causes of disability and result in reduced quality of life. The neuro-osteogenic network is one of the most promising fields in orthopaedic research. Neuropeptide Y (NPY) system has been reported to be involved in the regulations of bone metabolism and homeostasis, which also provide feedback to central NPY system *via* NPY receptors. Currently, potential roles of peripheral NPY in bone metabolism remain

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### Effects of Neuropeptide Y on Stem Cells and Their ...

<https://www.hindawi.com/journals/sci/2017/6823917> ▾

The regulatory effects of NPY on **stem cell** survival, proliferation, and differentiation may be helpful to overcome these limitations and facilitate the **application of stem cell-based** therapy. In this review, we summarized the regulatory effects of NPY on **stem cells** and discussed **their potential applications** in ...

**Cited by:** 6 **Author:** Song Peng, You-li Zhou, Zhi-yuan Song, Shu...**Publish Year:** 2017

### Neuropeptide Y and posttraumatic stress disorder

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4749915>

Accordingly, some people cope better than others with traumatic stress. **Neuropeptide Y (NPY)** is a 36-amino-acid peptide transmitter abundantly expressed in forebrain limbic and brain **stem** areas that regulate stress and emotional behaviors. Studies largely in rodents demonstrate a role for NPY in promoting coping with stress.

**Cited by:** 108 **Author:** R Sah, T D Geracioti**Publish Year:** 2013

### Mechanisms of neuropeptide Y's effects on adipose tissue ...

<https://portal.nifa.usda.gov/web/crisprojectpages/...> ▾

Apr 30, 2019 · **MECHANISMS OF NEUROPEPTIDE Y'S EFFECTS ON ADIPOSE TISSUE DEPOSITION IN CHICKENS** ... are now focused on understanding the limited growth **potential** of the **cells** from this line rather than the role of **neuropeptide Y** in regulating **their** growth (although such experiments may reveal a role of **neuropeptide Y** in this capacity). ... and gene expression ...

### Recent Advancements in Stem Cell and Gene Therapies For ...

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2838966>

The potential applications of stem cell therapies for treating neurological disorders are enormous. Many laboratories are focusing on stem cell treatments for CNS diseases, including **spinal cord injury**, **Amyotrophic lateral sclerosis**, **Parkinson's disease**, **Huntington's disease**, **multiple sclerosis**, **stroke**, **traumatic brain injury**, and **epilepsy**.

**Cited by:** 85 **Author:** Janice R. Naegele, Xu Maisano, J. Yang, S. ...**Publish Year:** 2010

### Neuropeptide Y is produced in visceral adipose tissue and ...

<https://www.fasebj.org/doi/10.1096/fj.07-100735>

Mar 06, 2008 · **Effects of Neuropeptide Y on Stem Cells and Their Potential Applications in Disease Therapy** **Stem Cells International**, Vol. 2017 Recent advances in the understanding of how **neuropeptide Y** and  $\alpha$ -melanocyte stimulating hormone function in adipose physiology

**Cited by:** 183 **Author:** Kaiping Yang, Haiyan Guan, Edith Arany, Da...**Publish Year:** 2008

### Therapeutic potential of neuropeptide Y (NPY) receptor ligands

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3394504>

**Neuropeptide Y and its receptors** are expressed throughout the body. In the central **nervous system**, they are located in many brain regions and in the spinal cord. In the periphery, NPY is notably located in the sympathetic **nervous system**, where it acts with **norepinephrine** and adenosine triphosphate (ATP)...

**Cited by:** 208 **Author:** Claes R Wahlestedt**Publish Year:** 2010

### Platelet Lysate-Derived Neuropeptide y Influences ...

<https://www.nature.com/articles/s41598-018-32623-8>

Sep 25, 2018 · **Neuropeptide Y (NPY)** is a 36-amino acid peptide produced by the central nervous system and implicated in physiological neuron-mediated activities such as ...

**Cited by:** 5 **Author:** Rita Businaro, Eleonora Scaccia, Antonella ...**Publish Year:** 2018

### Enteroendocrine cells, stem cells and differentiation ...

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5117771>

Oct 24, 2016 · This explains why changes in the densities of enteroendocrine **cells**, **stem cells** and differentiation progeny to enteroendocrine **cells** could be detected 3 days after the induction of colitis using TNBS, and that the treatment of colitis for 5 days with anti-inflammatory agents restored **their** densities to normal levels.

**Cited by:** 7 **Author:** Magdy El-Salhy, Tarek Mazzawi, Kazuo Um...**Publish Year:** 2016

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Mechanisms of action of neuropeptide Y on stem cells



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## Effects of Neuropeptide Y on Stem Cells and Their ...

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Increasing evidence indicates that NPY exerts multiple regulatory effects on **stem cells**. As a kind of primitive and **undifferentiated cells**, **stem cells** have the **therapeutic potential** to replace **damaged cells**, **secret paracrine molecules**, promote **angiogenesis**, and **modulate immunity**.

**Cited by:** 6

**Author:** Song Peng, You-li Zhou, Zhi-yuan Song...

**Publish Year:** 2017

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**Cited by:** 208

**Author:** Claes R Wahlestedt

**Publish Year:** 2010

## Neuropeptide Y Induces Hematopoietic Stem/Progenitor Cell ...

<https://stemcellsjournalsonlinelibrary.wiley.com/doi/10.1002/stem.2383>

Neuropeptide Y (NPY) is secreted from the **brain** or sympathetic nerves in the **autonomic** system by various stressors, and has important roles in a variety of physiological processes such as **appetite**, **energy storage**, **anxiety** and **pain** 25-27.

**Cited by:** 15

**Author:** Min Hee Park, Jong Kil Lee, Namoh Kim...

**Publish Year:** 2016

## Neuropeptide Y: a key molecule in ... - Home: Cell Press

[https://www.cell.com/molecular-medicine/fulltext/S1357-4310\(98\)01395-1](https://www.cell.com/molecular-medicine/fulltext/S1357-4310(98)01395-1) ▾

**Neuropeptide Y (NPY)** is a key component of feeding-drive systems; **its** secretion and **action** are regulated by corticotropin-releasing factor (CRF), serotonin and other neuroactive substances. The



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## Effects of Neuropeptide Y on Stem Cells and Their ...

<https://www.hindawi.com/journals/sci/2017/6823917> ▾

**Neuropeptide Y** (NPY), a 36-amino acid peptide, is widely distributed in the central and peripheral nervous systems and other peripheral tissues. It takes part in regulating various biological processes including food intake, circadian rhythm, energy metabolism, and neuroendocrine secretion. Increasing evidence indicates that NPY exerts multiple regulatory effects **on stem cells**.

**Cited by:** 6 **Author:** Song Peng, You-li Zhou, Zhi-yuan Song, ...  
**Publish Year:** 2017

## Neuropeptide Y Induces Hematopoietic Stem/Progenitor Cell ...

<https://stemcellsjournals.onlinelibrary.wiley.com/doi/full/10.1002/stem.2383>

Apr 19, 2016 · **STEM CELLS** is read and written by clinical and basic scientists whose expertise encompasses the rapidly expanding fields of **stem** and progenitor **cell** biology. **STEM CELLS** welcomes original articles and concise reviews describing basic laboratory investigations of **stem cells** and the translation of their clinical aspects of characterization and manipulation from the bench to patient care.

**Cited by:** 15 **Author:** Min Hee Park, Jong Kil Lee, Namoh Kim, ...  
**Publish Year:** 2016

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<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4749915>

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**Publish Year:** 2013

## Neuropeptide Y: a key molecule in ... - Home: Cell Press

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**Neuropeptide Y** (NPY) is a key component of feeding-drive systems; **its** secretion and **action** are regulated by corticotropin-releasing factor (CRF), serotonin and other neuroactive substances. The

## Neuropeptide Y



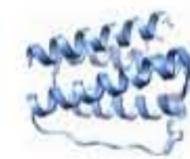
Neuropeptide Y is a 36 amino-acid neuropeptide that is involved in various physiological and homeostatic processes in both the central and peripheral nervous systems. NPY has been identified as the most abundant peptide present in the mammalian central nervous system, which consists of the brain and spinal cord. It is secreted alongside other neurotransmitters such as GABA and glutamate.

Wikipedia

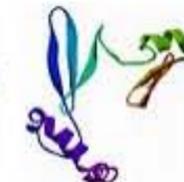
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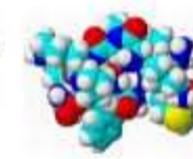
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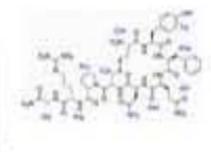
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