# Analogs of N-acetylglucosamine and The Therapeutic Use in Treating Autoimmune Diseases

Tech ID: 24554 / UC Case 2014-802-0

## BRIEF DESCRIPTION

Analogs of N-acetylglucosamine are compounds with the same therapeutic benefits of N-acetylglucosamine and improved cell membrane permeability.

## FULL DESCRIPTION

Dietary supplement N-acetylglucosamine (GlcNAc) inhibits T cell function and autoimmunity by enhancing N-glycan branching in T cells. It can be used as a potential treatment for autoimmune diseases such as multiple sclerosis (MS). However, commercialization of GlcNAc as a therapeutic is hampered by very high concentrations required for biological affect and limited intellectual property protection due to 'over the counter' availability in the United States.

Researchers at UC Irvine developed analogs of GlcNAc characterized by having the beneficial therapeutic effects of GlcNAc while simultaneously overcoming the above disadvantages of GlcNAc. GlcNAc analogs of the invention comprise GlcNAc modified with hydrophobic functional groups to increase the lipophilic properties that enhances their cell entry. They can be efficiently converted to GlcNAc by catabolic enzymes and increase N-glycan branching in vitro at a 1000-fold lower concentrations than GlcNAc. In addition, they have very low toxicity. The GlcNAc analogs provide a potential method in inhibiting, treating, or preventing a disease associated with low branched N-glycan levels.

## SUGGESTED USES

Treating low branched N-glycan associated autoimmune diseases

## ADVANTAGES

Higher membrane permeability and lower dose required for therapeutic effects comparing with GlcNAc

Low toxicity

## PATENT STATUS

| Country | Type | Number | Dated | Case |
|---|---|---|---|---|
| United States Of America | Issued Patent | 11,103,520 | 08/31/2021 | 2014-802 |

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## OTHER INFORMATION

## CATEGORIZED AS

- » **Biotechnology**
  - » Health
- » **Materials & Chemicals**
  - » Biological
- » **Medical**
  - » Disease: Autoimmune and Inflammation
  - » Disease: Central Nervous System
  - » Therapeutics
- » **Research Tools**
  - » Reagents

## RELATED CASES

2014-802-0

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