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Patent Search

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Inventor

Name	Address	Country	Nationality
Bhavna	Faculty of Pharmacy, DIT University, Mussorie- Diversion Road, P.O. Bhagwantpur, Dehradun, UTTARAKHAND-248009, INDIA	India	India
Varshney, Mansi	Faculty of Pharmacy, DIT University, Mussorie- Diversion Road, P.O. Bhagwantpur, Dehradun, UTTARAKHAND-248009, INDIA	India	India
Sethiya, Neeraj	Faculty of Pharmacy, DIT University, Mussorie- Diversion Road, P.O. Bhagwantpur, Dehradun, UTTARAKHAND-248009, INDIA	India	India
Sahoo, Arpita	Faculty of Pharmacy, DIT University, Mussorie- Diversion Road, P.O. Bhagwantpur, Dehradun, UTTARAKHAND-248009, INDIA	India	India
Sahoo, Jagannath	Faculty of Pharmacy, DIT University, Mussorie- Diversion Road, P.O. Bhagwantpur, Dehradun, UTTARAKHAND-248009, INDIA	India	India

Applicant

Name	Address	Country	Nationality
DIT University	Mussorie- Diversion Road, P.O. Bhagwantpur, Dehradun, UTTARAKHAND-248009, INDIA	India	India

Abstract:

The present invention relates to solid-lipid nanoparticles comprising baicalein as active pharmaceutical ingredient for site specific drug delivery to brain through nasal route composition and method of preparation thereof. The baicalein loaded solid lipid nanocarrier system makes it possible to target the active constituents at the specific site in brain and eliminating the related side effects when administered by nasal delivery. Baicalein loaded solid lipid nanoparticle are used for treating neurodegenerative disorder administration through intranasal route. The nanoparticles are prepared by solvent emulsification method and optimized. Optimized formulation was evaluated by various evaluation parameters like particle size, SEM, TEM, DSC, and XRD. The administration of Baicalein loaded solid lipid nanoparticle through intranasal route is an efficient, rapid means of drug delivery systems, to deliver the drug directly to the brain. The administration of Baicalein loaded solid lipid nanoparticle through intranasal route is found to be useful for bypassing the blood brain barrier and avoids side effects of the drugs and also enhance the bioavailability.

Complete Specification

The present invention relates to nanoparticles and a method of producing nanoparticles and specifically, the present invention relates to solid-lipid nanoparticles comprising baicalein as active pharmaceutical ingredient for site specific drug delivery.

BACKGROUND/PRIOR ART OF THE PRESENT INVENTION

Neurodegenerative disorders are defined as progressive and chronic disorders which cause loss of neurons and oxidative stress. Neurodegenerative disease results from the gradual and progressive loss of neural cells, leading to nervous system dysfunction. Up to 1 billion people nearly one in six of the world's population suffers from neurological disorder, from alzheimer's and parkinson's disease, strokes, multiple sclerosis, epilepsy to migraine, brain injuries and neuroinfection. Worldwide around 50 million people have dementia, with nearly 60% living in low and middle-income countries. Every year, there are nearly 10 million new cases. The estimated proportion of general population aged 60 and over with dementia at a given time is between 5-8%.

Alzheimer is the most frequently occurring disease, the main risk of this disease is ageing, and the symptoms get worse with time as AD is progressive disorder. The main symptom of AD is loss of memory, others symptoms include failure to plan and solve the problems, not able to recognize the time and place, loss of the power of judgment etc. The main cause of AD is loss of neurons and differences in the temporal frontal cortex region due to this inflammation occurs and shows the symptoms of AD. The dissection of ADs brain causes diffusion of cerebral atrophy. The bend of the outer part of brain shrinks and grooves become widen and ventricles that hold CSF become enlarged.

The treatment of brain disorder is challenging due to presence of blood brain barrier (BBB) and blood cerebrospinal barrier. BBB represents a rigid barrier for delivery of

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