CONTRAST EYE DROPS

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ABSTRACT

The present attempt is concerted for the development of an ophthalmic formulation for the delivery of diagnostic dye in order to get better images in case of various ocular pathological conditions. The homogenous spreading of the dye is the primary condition for the proper imaging with regard to diagnostic purpose. Different studies on the utilization of microemulsions for ocular drug delivery prove their potential for the retention and homogenous spreading over the desired ocular surface. The combination of this novel formulation with diagnostic techniques may provide a better tool for future ocular diagnostic imaging.

FIELD OF INVENTION

The present invention proposed a novel formulation for diagnostic ocular imaging in different diseased conditions related to the eye.

BACKGROUND OF THE INVENTION

Ocular delivery for therapeutic and diagnostic purpose with conventional delivery systems is a considerable challenge. The main obstacles include:

- Ocular irritation
- Low residence time due to lachrymal drainage
- Homogenous spreading of the formulation
- Lachrymal fluid-eye barriers
- Blood-ocular barriers

A number of ophthalmic delivery systems have been developed to overcome the above challenges, preferentially for homogenous spreading and to prolong the residence time of topically applied formulations onto the eye. The probable use of microemulsions for ocular delivery offers several optimistic pharmaceutical and biopharmaceutical possessions including exceptional thermodynamic stability, phase transition to the liquid-crystal state, very low surface tension and small droplet size, which may result in improved ocular retention and minimal ocular irritation with homogenous distribution. Furthermore,

incorporation of both lipophilic and hydrophilic dyes is possible according to the diagnostic requirements, so that the loaded dyes can diffuse passively as well get significantly partitioned in the variable lipophilic-hydrophilic corneal barrier.

SUMMARY OF THE INVENTION

The proposed formulation is a microemulsion composed of an oil phase, surfactant, co-surfactant and aqueous phase. All the selected components are reported to be safe for ocular delivery in various reports. Microemulsions are thermodynamically stable-phase transition systems which possess low surface tension and small droplet size typically in the range of 5–200 nm.

The successful ophthalmic imaging is reliant on the diminution in the pre-corneal loss of diagnostic agent by increasing the corneal contact time and homogenous spreading. The utilization of microemulsion based **Contrast (Radiopaque tropical dye) eye drop** for radiograph imaging by computed tomography (CT) technique will provide better quality images.

DETAILED DESCRIPTION

The proposed formulation will be composed of the following ingredients:

S. No.	Ingredient	Role
1	Iohexol	Dye
2	Isopropyl myristate/Isopropyl palmitate	Oil phase
3	Tween 80/Span 80	Surfactant
4	Transcutol P/Propylene glycol	Co-surfactant
5	Water	Aqueous phase

The proportion of ingredients will be optimized on the basis of phase diagram study and ocular irritancy studies. Oil phase will be varied between 20-30%w/w while the combined proportion of surfactant and co-surfactant will be varied between 35-50%w/w and an appropriate proportion of aqueous phase will be added to get the optimized microemulsion.

CLAIMS

What is claimed is:

1. First attempt to develop a novel formulation for ocular imaging.
2. Better images when compared to currently available techniques.
3. Low irritancy during the imaging process.
4. Can be used as a vehicle for other dye or therapeutic agents for different ocular pathological conditions.

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