

ПАТЕНТЫ/PATENTS

Чтобы ознакомиться с полными текстами зарубежных патентов, следует пройти по ссылке https://ru.espacenet.com/?locale=ru_RU с указанием номера документа, отраженного в реферате

TW202106286 (A) — 2021-02-16

DISSOLVABLE POLYMERIC EYE INSERTS AND METHOD OF USING SAME

Polymeric eye inserts are provided that may be dissolvable when placed in the cul-de-sac of the eye. These inserts may contain one or more polymers as well as a softener/plasticizer so that, when inserted into the eye, they may absorb tears, and dissolve and slowly release lubricant into the tear film to lubricate and protect the ocular surface for an extended duration of time. Increased retention time on the ocular surface for longer lasting relief may reduce dosing frequency and patient burden typically associated with topical drop usage. These polymeric eye inserts also may include one or more pharmaceutically active agents.

WO2021076918 (A1) — 2021-04-22

ASSAY FOR RAPID EVALUATION OF CHOROIDAL MAST CELL DEGRANULATION

The present invention relates to the field of ophthalmology. More specifically, the present invention provides compositions and methods useful for screening for drugs to treat age-related macular degeneration (AMD) including geographic atrophy (GA). In one embodiment, a method comprises the steps of (a) administering a drug to a mammal, wherein the mammal comprises a rat or a mouse; (b) enucleating the eyes of the mammal; (c) removing the anterior eye and excising the retina from the eye, wherein the eye comprises an eyecup that comprises choroidal mast cells (MCs); and (d) measuring mast cell degranulation. In an alternative embodiment, a method of the present invention can comprise the steps of (a) contacting an eyecup of a mammal with a drug, wherein the eyecup comprises choroidal mast cells; and (b) measuring MC degranulation.

BG112945 (A) — 2020-12-15

CONTACT AND INTRAOCULAR LENSES WITH FUNCTIONAL NANOCOATING AND A METHOD THEREOF

The invention relates to contact and intraocular lenses with functional nanocoating and a method thereof, particularly to contact and intraocular lenses with nanocoating with antibacterial and antifungal action, solid optic intraocular lenses, soft contact lenses, soft optic intraocular lenses, as well as on intrastromal ring segments for improving the refraction of the eye, which are applicable in the field of humanitarian and veterinary medicine, particularly in the field

of ophthalmology. According to the method for manufacturing contact and intraocular lenses with functional nanocoating, antibacterial and antifungal coating is applied on solid contact lenses, soft contact lenses, cosmetic contact lenses, medical contact lenses, solid optical intraocular lenses, soft optical intraocular lenses, as well as an antibacterial and antifungal coating of Ag (silver) and Al (aluminum) or Al_2O_3 (aluminium oxide) is applied from an intrastromal ring ring to improve the refraction of the eye via magnetron sputtering. For the purpose is used dispersion target from Ag (silver) and Al_2O_3 (aluminium oxide) in an argon medium or a dispersion target of Ag (silver) and Al (aluminum) in a mixture of oxygen and argon. The solid contact lens and solid optic intraocular lens represent a dense transparent body of high-quality plastic — polymethylmethacrylate. The soft contact lens and soft optic intraocular lens represent an elastic transparent body from different soft elastic transparent materials, such as hydroxyethyl methacrylate, hydrogel and silicon-hydrogel. The intrastromal semi-circular ring segments — rings for improving the refraction of the eye represent a solid transparent body from high quality plastic — polymethylmethacrylate. All of them are external with transparent coating of nanolayer of Ag (silver) and Al_2O_3 (aluminium oxide) having antibacterial and antifungal action. The coating provides a great possibility of protection against inflammatory processes in the eye. It has high biocompatibility, it is not cytotoxic and does not violate the design and has appropriate morphology.

WO2021069962 (A1) — 2021-04-15

METHOD AND DEVICE FOR TREATMENT AND/OR PREVENTION OF OPHTHALMIC DISEASES

This invention relates to the field of ophthalmology and prevention and medical treatment of various ophthalmic diseases. The object of the invention is to provide the method for improving treatment quality and efficacy. The method of treatment and prevention of ophthalmic diseases includes an integrated eye exposure to specific trains of color pulses of different wavelengths and eye exposure to the pulsed magnetic field through generation of a train of pulses synchronously with optical pulses. The device for implementing the method includes a set of light sources of different wavelengths and also pulse magnetic inductors configured to produce effect of exposure of eyes to magnetic pulses, a control device and pulse modulators. A technical result resides in the improved efficacy of treatment by improving hemodynamics in the retina, ophthalmic nerve and capillary perfusion resulting in the increased delivery of drugs, enhancing functional activity of nerve cells.

US2021085599 (A1) — 2021-03-25

TREATMENT OF OPHTHALMOLOGICAL CONDITIONS WITH ACETYLCHOLINESTERASE INHIBITORS

Embodiments of the invention involve treating ophthalmology conditions by the topical or oral use of acetylcholinesterase inhibitors. By effectively reducing or eliminating the population of Demodex mites in affected areas and areas where Demodex mites may exist, this treatment achieves a more complete remission of clinical signs and symptoms of the ophthalmological afflictions than any previously described method. Embodiments of the invention are useful for treating ocular afflictions caused by Demodex-induced inflammatory eye conditions, including meibomian gland dysfunction, conjunctivitis, keratoconjunctivitis, hyperemia, blepharitis and dry eye disease.

BG3687 (U1) — 2020-05-15

COMBINED LASER RADIATION APPARATUS FOR TREATMENT OF OCULAR DISEASES

The utility model relates to a combined apparatus with laser radiation for treatment of ocular diseases, applicable in medicine, in particular in the field of ophthalmology, for the treatment of degenerative and inflammatory processes of the eye, eye injuries, as well as for the biostimulation of the eye. The combined apparatus with laser radiation for the treatment of ocular diseases, comprising diode lasers with different laser wavelengths, consists of a cylindrical housing, in which are placed five diode lasers with different wavelengths from $\lambda = 530$ nm to $\lambda = 830$ nm, arranged in the openings of a dielectric holder with a round shape. Each of the five laser diodes is connected separately to a power supply unit, united in a cable by means of buttons, located on the control panel. In the direction of the laser radiation at a distance in front of each laser diode are arranged the corresponding optical light conductors, which are assembled in a common light beam, as well as after its end is arranged a collimating optical system, and in front of it is arranged a diaphragm. The electronic module comprises a power supply unit for the five diode lasers, a control unit with a microprocessor for measuring the power of the five diode lasers and their time modes and battery. On the front section of the electronic module there is arranged a panel, on which are placed buttons for individual on and off of each diode laser, as well as a button for setting the required power of each single diode laser and a button for setting the required exposure, display for visual representation of the set power parameters, exposure time and button to turn on and off the apparatus. The five laser diodes can have the following lengths of laser radiation: $\lambda = 530$ nm (2a), $\lambda = 633$ nm (2b), $\lambda = 670$ nm (2c), $\lambda = 780$ nm (2d) and $\lambda = 830$ nm (2e), as well as to be combined with each other in all possible combinations, whereby the collimator optical system collimates simultaneously the laser beams of several diode lasers. The combined laser radiation apparatus for treatment

of ocular diseases is characterized by compactness, portability and functionality. It allows the combined use of several types of laser radiation, which complements and enhances the healing effect.

BG3568 (U1) — 2020-04-15

HYDROLAT EYE DROPS — ARTIFICIAL TEARS WITH ANTISEPTIC ACTION

The utility model relates to hydrolat eye drops — artificial tears with antiseptic action, particularly to hydrolate eye drops — artificial tears with microbicidal, moisturizing, cleansing and antiallergic action, which finds application in medicine and in particular in ophthalmology. The hydrolat eye drops — artificial tears with antiseptic action represent a hydrolat solution obtained by distillation of fresh rose blossom — *R. damascena* — rose water, with a composition of 99.1 wt. % rose water and 0.9 wt. % essential extract — rose oil. The hydrolat eye drops — artificial tears with antiseptic action represent a hydrolat solution obtained by distillation of fresh rose blossom — *R. damascena* — rose water, with a composition of 48.2 wt. % rose water and 1.8 wt. % essential extract — rose oil and 50 wt. % hydrolates, comprising equal wt. % of: Roman chamomile, eyebright, aloe vera, basil, calendula, St. John's wort, cornflower, rosehip, bilberry, mulberry. The hydrolat eye drops — artificial tears with antiseptic action represent a hydrolat solution obtained by distillation of fresh rose blossom — *R. damascena* /- rose water with a composition of 48.2 wt. % rose water and 1.8 wt. % essential extract — rose oil and 50 wt. % hydrolates, comprising equal wt. of one or more of the following: Roman chamomile, eyebright, aloe vera, basil, calendula, St. John's wort, cornflower, rosehip, bilberry, mulberry. The aforementioned hydrolates may contain essential extracts of flowers, fruits, leaves and roots of the plants. The hydrolat eye drops — artificial tears with antiseptic action are easily applicable in the treatment of many eye diseases, such as dry eye syndrome, allergic and bacterial conjunctivitis, keratitis, cataracts, macular degeneration, when putting in and wearing contact lenses, and others in the field of ophthalmology.

BG112803 (A) — 2020-04-15

ULTRAVIOLET IRRADIATION APPARATUS FOR CORNEAL CROSS-LINKING

The utility model relates to an ultraviolet irradiation apparatus for Corneal cross-linking, applicable in medicine, in particular in the field of ophthalmology, for the treatment of ocular diseases such as: keratoconus, corneal ulcer, infectious keratitis, postoperative Lasik Ectatic, etc. The apparatus with ultraviolet radiation for Corneal cross-linking comprises a device consisting of a strip in the shape of a circle covering the head. Its two ends are connected by a screw mechanism for fastening to the patient's forehead. On the opposite side of the strip to the patient's forehead is movably attached a visor by means of screws. A mechanical

adapter is attached to the front of the visor. It consists of a guide, at one end of which there is a screw clamp. There is a rectangular hole on the flat surface of the guide. A mechanical carriage is located in the guide. It is a piece with a flat rectangular surface; with a round hole and a cylindrical socket. The ultraviolet light source consists of ultraviolet LEDs (one or more than one) mounted in a cylindrical housing corresponding in diameter to the diameter of the socket. A diaphragm is located at a distance in front of the ultraviolet light source. The ultraviolet irradiation apparatus for Corneal cross-linking also comprises an electronic module electrically connected to the ultraviolet light source. The electronic module comprises units for controlling the power of the light source and the time of irradiation (exposure to irradiation on the cornea of the eye), as well as a display and buttons for monitoring and adjusting the parameters of the electronic module. The ultraviolet radiation apparatus for Corneal cross-linking is characterized by compactness, portability, functionality and in comparison with the devices known for such purposes it has the shortest duration of irradiation for obtaining a healing effect on the eye.

BG3552 (U1) — 2020-03-16

BROAD-SPECTRUM ANTISEPTIC EYE DROPS

The utility model relates to broad-spectrum antiseptic eye drops, in particular to broad-spectrum antiseptic eye drops with silver nanoparticles, which finding application in the field of medicine and in particular in ophthalmology. According to the utility model, the broad-spectrum antiseptic eye drops with silver nanoparticles, represent a colloid solution with a composition of silver nanoparticles chemically pure with sizes below 100 nm in a ratio of 20–40 mg of silver nanoparticles per litre of sterile double-distilled water, i.e. colloid solution with a composition of 2–4 % silver nanoparticles in sterile double-distilled water. With application as intraocular broad-spectrum antiseptic eye drops with silver nanoparticles, they represent a colloid solution with a composition of silver nanoparticles chemically pure with sizes below 3 nm in a ratio of 20–40 mg of silver nanoparticles per litre of sterile double-distilled water, i.e. colloid solution with a composition of 2–4 % silver nanoparticles in sterile double-distilled water. Broad-spectrum antiseptic eye drops with silver nanoparticles can be a hydrolat with a composition of silver nanoparticles — chemically pure with sizes below 100 nm in a ratio of 20–40 mg of silver nanoparticles in one litre of sterile distilled water (hydrolat), i.e. they are a hydrolat with

a composition of 2–4 % silver nanoparticles in residual sterile distilled water (hydrolat), obtained from the distillation of herbs, plants, fruits and others. With application also as intraocular broad-spectrum antiseptic eye drops with silver nanoparticles, they represents a hydrolat with a composition of silver nanoparticles — chemically pure with sizes below 3 nm in a ratio of 40 mg of silver nanoparticles in one litre of sterile distilled water (hydrolat), i.e. they are a hydrolat with a composition of 4 % silver nanoparticles in residual sterile distilled water, obtained from the distillation of herbs, plants and fruits, etc. Silver nanoparticles with a size of and below 3 nm can cross all eye barriers. Broad-spectrum antiseptic eye drops with silver nanoparticles have anti-inflammatory and anti-allergic effects. In the combination of silver nanoparticles in a hydrolat of herbs, plants and fruits they have an additive effect.

ES2809299 (T3) — 2021-03-03

IRIS RETRACTOR

An iris retractor (10, 30, 50, 150, 170, 190, 200) including a plurality of hooks (12, 32, 52, 152, 172, 192, 202) disposed or formed at a distal end of slender elements (14, 34, 54, 154, 174, 194, 204), and a proximal handle (20, 40, 60, 176, 196, 206) at a proximal end of the slender elements (14, 34, 54, 154, 174, 194, 204), the slender elements (14, 34, 54, 154, 174, 194, 204) resiliently moving between retracted and expanded positions by manipulation of the slender elements, wherein in the retracted position, the hooks (12, 32, 52, 152, 172, 192, 202) are close to one another and the slender elements (14, 34, 54, 154, 174, 194, 204) are close to one another, and wherein in the expanded position, the hooks are separate and spaced apart from each other and distal portions of the slender elements are separate and spaced apart from each other.

FIG. 5E

