Claims

1. Lens implant (12) for a placement into a posterior portion (3b) of an intracapsular space (3) after removal of a native lens body (2) from a lens capsule 13 of an eye, wherein the lens implant (12) is formed of one part and manufactured from suitable non-cellular structural transparent material,

wherein the lens implant (12) is dimensioned to keep an anterior portion (3a) of the intracapsular space (3) free of non-cellular structural material,

wherein the lens implant (12) is devoid of any further part formed by non-cellular structural material or components thereof,

wherein the lens implant (12) comprises at most 40% of a volume of the native lens body (2), which was removed or of the volume of a native lens body (2) with an average size, and

wherein the lens implant (12) has a convex posterior surface with a curvature which is shaped to fit a posterior inner surface (13b) of the capsule (13).

2. The lens implant (12) according to claim 1, wherein the lens implant (12) is dimensioned to comprise at most 35%, 30%, 25%, 20%, 15%, 10%, 5% or 2% of a volume of the native lens body (2), in particular a volume of at most 120 µl, 110 µl, 100 µl, 90 µl, 80 µl, 70 µl, 60 µl, 50 µl, 40 µl, 30 µl, 20 µl or 10 µl.

3. The lens implant (12) according one of claims 1 or 2, wherein the radius of curvature of the posterior surface of

lens implant (12) is in a range of 4 to 8 mm, or 4.6 to 7.5 mm or 5 to 7 mm or around 6 mm.

4. The lens implant (12) according to one of the previous claims, wherein a maximal diameter (14) of the implant (12) at most equals the length of an equatorial diameter (5) of the native lens (1) or

wherein the maximal diameter (14) of the implant (12) measures at most 98%, 95%, 90%, 80%, 70%, 60% or 50% of the equatorial diameter (5) of the native lens (1) or wherein the maximal diameter (14) of the implant (12) measures in a range with an upper boundary of 5 to 12 mm, in particular 11, 10, 9, 8, or 7, or 6 mm.

5. The lens implant (12) according to one of the previous claims, wherein the maximal diameter (14) of the implant (12) measures at least 50%, 60%, 70%, 80% or 90% of the equatorial diameter (5) of the native lens (1) or wherein the maximal diameter (14) of the implant (12) measures in a range with a lower boundary in a range of 3 to 7 mm, in particular 3, 4, 5 or 6 mm.

6. The lens implant (12) according to one of the previous claims, wherein the transparent material is selected to be deformable, allowing the implant (12) to be introduced into the intracapsular space (3) in a folded or rolled-up state through an opening in the lens capsule (13), wherein the largest diameter of the opening measures in the range of 0.5 to 4 mm, in particular between 0.5 and 3 mm, more particularly less than 3, 2, 1.5 or 1 mm.

7. The lens implant (12) according to one of the previous claims, wherein an anterior surface of the implant (12) is also convex or wherein the anterior surface is plan or concave.

8. The lens implant (12) according to one of the previous claims, wherein it is dimensioned and shaped to provide a refractive power suitable for vision adapted to infinity, in particular with a refractive power adaptable to the dimensions of the eye in a range from −20 dioptre to +60 dioptre including no refractive power corresponding to 0 dioptre.

9. A kit comprising a lens implant (12) according to one of claims 1 to 8 and a capsule filling composition (15) for use in intraocular surgery for filling an intracapsular space (3) after removal of a native lens body (2) from a lens capsule 13 of an eye,

wherein the filling of the intracapsular space (3) accompanies the introduction of a lens implant (12) manufactured from suitable non-cellular structural transparent material into a posterior portion 3 (b) of the intracapsular space (3) replacing a posterior portion (2b) of the lens body (2) and wherein the volume of the lens implant (12) amounts to at most 40% of the volume of the lens body (2),

wherein the introduced volume of the filling composition (15) together with the volume of the implant (12) provides for reconstitution of a volume essentially corresponding to the volume of the native lens body (2), which was removed or of the volume of a native lens body (2) with an average size, and

wherein the capsular filling composition (15) is of an aqueous composition and is devoid of non-cellular structural material or components thereof for replacement of lens fibers.

10. Kit according to claim 9, wherein the capsule filling composition (15) comprises cells which are capable of developing lens fibers which in particular are obtained from a probe of an eye, more particularly from a probe comprising lens epithelial cells (4).

11. Kit according to claim 10, wherein the cells are derived from an autologous or a heterologous human eye or from a non-human eye in particular from a non-human mammalian eye.

12. Kit according to one of claims 9 to 11, wherein the capsule filling composition (15) comprises ingredients selected from:

- hyaluronic acid,
- an anti-TGFβ blocking agent,
- a growth factor, in particular one or several of: a fibroblast growth factor, including FGF-1 and FGF-2, epidermal growth factor (EGF), platelet-derived growth factor (PDGF), insulin growth factor I or II (IGF-I or IGF-II),
- a retinoid.

13. A method for providing an intraocular lens implant (12) according to one of claims 1 to 8 or a kit according to one of claims 9 to 12 comprising an intraocular lens implant (12) and a capsule filling

composition (15) for use in intraocular surgery after removal of a native lens body (2) comprising the steps of

a. providing results of measurements of an eye or taking measurements for providing such results selected in particular of measurements

- of dimensions of the eye, in particular of a lens (1) or a cornea (10), or of the length of the eye along a visual axis (11),
- of an optical power of the eye, in particular of the lens (1) or the cornea (10),
- of a curvature of a posterior surface of the lens (1) or of a radius of curvature of a posterior surface of the lens (1), in particular along the visual axis (11) or within the vicinity of the visual axis (11) of the lens (1),

and

b. selecting an implant according to one of claims 1 to 8 based on the results of step a.

14. The method according to claim 14 of providing the kit according to one of claims 9 to 12 comprising an intraocular lens implant (12) and a capsule filling composition (15) for use in intraocular surgery wherein in an additional step the ingredients of the filling composition (15) are adapted by addition of autologous or heterologous living cells and/or by addition of an ingredient, in particular selected from the group of ingredients comprising:

- hyaluronic acid,
- an anti-TGFβ blocking agent,
- a growth factor, in particular one or several of: a fibroblast growth factor, including FGF-1 and

FGF-2, epidermal growth factor (EGF), platelet-derived growth factor (PDGF), insulin growth factor I or II (IGF-I or IGF-II),

- a retinoid.