

# BRILLIANT PEEL®



## Brilliant Staining:

- Selective staining of the ILM
- Negative staining of the ERM and of residual vitreous fragments
- Quick and intensive staining due to sinking of the dye

## Brilliant Operation Results:

- Biocompatible solution for identifying residual ILM fragments
- Safe application due to ergonomic syringe design
- Osmolarity of 301 mOsm/L H<sub>2</sub>O within the physiological range (290–310 mOsm/L)



**Comparison of the dyes Brilliant Blue G (BBG), Indocyanine Green (ICG) and Trypan Blue (TB) for chromovitrectomy<sup>8,9</sup>**

|  | BBG              | ICG        | TB        | <b>Composition and Properties of BRILLIANT PEEL®</b>  |
|--|------------------|------------|-----------|---|
| <b>Chemical group</b>                            | Triphenylmethane | Cyanine    | Diazo     | <b>Composition in one 0.5 syringe / vial</b><br>0.125 mg – Brilliant Blue G<br>0.065 ml – D <sub>2</sub> O<br>0.95 mg – Na <sub>2</sub> HPO <sub>4</sub> x 2 H <sub>2</sub> O<br>0.15 mg – NaH <sub>2</sub> PO <sub>4</sub> x 2 H <sub>2</sub> O<br>4.1 mg – NaCl<br>ad 0.5 ml water for injection purposes<br><br><b>Concentration:</b> 0.25 g/l<br><b>pH-value:</b> 7.52<br><b>Osmolality:</b> 306 mOsm/kg H <sub>2</sub> O<br><b>Maximum absorption:</b> 584.0 nm<br><b>Density:</b> 1.017 – 1.019 g/cm <sup>3</sup> |
| <b>Color</b>                                     | blue             | dark green | dark blue |   |
| <b>Ready-to-use</b>                              | yes              | no         | yes       |   |
| <b>Toxicity<sup>1, 2, 3, 6, 7, 10</sup></b>      | no               | yes        | slightly  |   |
| <b>Registration</b>                              | yes              | no         | yes       |   |
| <b>Affinity to ILM<sup>4, 5, 8</sup></b>         | high             | high       | low       |   |
| <b>Affinity to ERM<sup>2</sup></b>               | low              | low        | high      |   |
| <b>Selective Staining of ILM<sup>2,4,5</sup></b> | strong           | strong     | low       |   |
| <b>Exposure time</b>                             | short            | short      | long      |   |
| <b>Fluid / gas exchange required</b>             | no               | no         | yes       |   |

**Cytotoxicity in accordance with DIN EN ISO 10993 and ILM-staining ability<sup>10,11</sup>**

| Dye  | Significant cytotoxic effect | ILM-Staining |
|--|------------------------------|--------------|
| <b>Brilliant Blue G</b><br>Cytotoxic effect: causes cell growth inhibition | > 0.3 g / L                  | strong       |
| <b>Indocyanine Green</b><br>Cytotoxic effect: causes apoptosis             | > 0.24 g / L                 | strong       |
| <b>Trypan Blue</b>   | > 0.13 g / L                 | low          |

**LITERATURE** 1 Lüke C, et al.: Retinal tolerance to dyes, Br J Ophthalmol, 2005, 89, 1188-1191 2 Haritoglou C, et al.: Färbetechniken in der Makulachirurgie, Ophthalmologe, 2006, 103, 927-934 3 Ueno A, et al.: Biocompatibility of Brilliant Blue G in a rat model of subretinal injection, Retina, 2007, 27, 499-504 4 Enaida H, et al.: Brilliant Blue G selectively stains the internal limiting membrane – Brilliant Blue G assisted membrane peeling, Retina, 2006, 26, 631 – 636 5 Enaida H, et al.: Preclinical investigation of internal limiting membrane staining and peeling using intravitreal Brilliant Blue G, Retina, 2006, 26, 623-630 6 Hisatomi T, et al.: Staining ability and biocompatibility of Brilliant Blue G – preclinical study of Brilliant Blue G as an adjunct for capsular staining, Arch Ophthalmol, 2006, 124, 514-519 7 Goldman JM, et al.: Adjunct devices for managing challenging cases in cataract surgery – capsular staining and ophthalmic viscosurgical devices, Curr Opin Ophthalmol, 2007, 18, 52-57 8 Meyer CH, et al.: Historical considerations in applying vital dyes in vitreoretinal surgery: from early experiments to advanced chromovitrectomy, Expert Rev. Ophthalmol., 2007, 71-77 9 Rodrigues EB, et al.: Vital dyes for chromovitrectomy, Curr Opin Ophthalmol, 2007, 18, 179-187 10 Hiebl W, et al.: Substances for staining biological tissues: use of dyes in ophthalmology, Klin Monatsbl Augenh, 2005, 222, 309-311 11 Kawahara S, et al.: Intracellular events in retinal glial cells exposed to ICG and BBG, IOVS, 2007, Vol. 48, No. 10