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## The effect of senofilcon- A mechanical protector on corneal endothelial damage during phacoemulsification in rabbit eyes

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**Purpose:** To investigate the protective effect of a senofilcon-A mechanical protector (9.5 mm trephined senofilcon-A lens, hard shell) preventing corneal endothelial cell damage by phacoemulsification in New Zealand white rabbit eyes.

**Setting:** Department of Ophthalmology, Seoul Metropolitan Government-Seoul National University Boramae Medical Center.

**Methods:** In 26 rabbit eyes, endothelial cell count, intraocular pressure, corneal thickness were measured before and 3 days after experiment. In study 1, senofilcon-A mechanical protector was inserted into anterior chamber in hard shell group (6 eyes), and only ocular viscosurgical device (OVD) was injected into anterior chamber in control group (6 eyes). All underwent 10 seconds intermittent phacoemulsification to a total of 2.5 minutes. In study 2, soft shell technique was used in control group (6 eyes). All underwent 5 minutes continuous phacoemulsification. In 2 eyes, we investigated safety and toxicity of senofilcon-A mechanical protector.

**Results:** In study 1, eyes with maintained mechanical protector resulted in 4% endothelial cell loss compared to 18% endothelial cell loss after phacoemulsification in eyes with OVD alone. However, the difference was not statistically significant ( $P=0.394$ ). Intraocular pressure, central corneal thickness also showed non-significant differences. In study 2, hard shell group showed significantly less damage in endothelial cell loss than soft shell group ( $P=0.026$ ). Intraocular pressure, central corneal thickness showed non-significant differences. Endothelial cell loss caused by senofilcon-A mechanical protector itself was negligible.

**Conclusion:** The senofilcon-A mechanical protector has protective effect against corneal endothelial cell damage during phacoemulsification in rabbits.

### Biography

Young Keun Han is currently an Associate Professor in Department of Ophthalmology, Seoul Metropolitan Government Seoul National University Boramae Medical Center. He is a Cornea, Cataract and Refractive Surgery Specialist and Member of Korean Ophthalmology Society and Korean Contact Lens Study Society. He has published over 30 papers in reputed journals since 2007 and has been serving as an Editorial Board Member of *Korean Journal of Ophthalmology*. He has an overall experience of over 20,000 surgeries mainly cataract surgery, corneal transplantations and refractive surgery.

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