Appendix 1

Microperimetry

Microperimetry (MP) was performed on both eyes of all subjects using the MP-1 microperimeter (Nidek Technologies, Padova, Italy). Test-retest variability was investigated by all subjects having 2 tests undertaken on each eye. A customized test grid of 44 retinal locations with an eight degree radius was used to cover the macular and para-macular region; with a mean retinal sensitivity recorded over this test area. Testing was conducted in a darkened room and all subjects underwent training at the beginning of the MP session to ensure correct operation of the response trigger, immediately prior to formal testing. All tests were performed after pupil dilatation with tropicamide 1% and phenylephrine 2.5%. The contralateral (non-tested) eye was occluded.

Subjects were instructed to fixate on a 2-degree cross fixation target and background illuminance was set within the mesopic range at 1.27cd/m^2. A Goldmann size III stimulus with an area of 4mm^2 and 200ms duration was used. A 4-2 testing strategy was employed, with the intensity of the stimulus reduced in 4dB steps until it is no longer recognized by the subject. The threshold is then crossed a second time by increasing the stimulus intensity by 2dB steps until it is detected once again. False positive errors were tested for by measuring responses to stimuli projected into the blind spot at 30 second intervals. Fixation stability was assessed using the bivariate contour ellipse area (BCEA) which represents an area in degrees where 68% of fixation points are located;[18] this value is reported by the Nidek software. An active eye tracking system corrects for fixation errors to ensure accurate stimulus projection in relation to retinal landmarks.

Repeat testing was performed on all subjects using the “follow-up” test option, which requires alignment of specific retinal landmarks at each subsequent test, to ensure similar location of stimuli projection.