

Cutting-edge research honoured at first-ever EURETINA Innovation Awards



Professor Einar Stefansson, chairman of the EURETINA Innovation Awards judging panel presenting the first prize to Professor Martin Rudolf



Professor Einar Stefansson, presenting the second prize to Professor Eberhart Zrenner

A project featuring groundbreaking research into novel therapeutic agents that could be used in the future to treat and prevent age-related macular degeneration has been accorded first prize in the inaugural Euretina Innovation Awards.

At an award ceremony held during the EURETINA Congress, Professor Martin Rudolf of the University of Lübeck in Germany received a cheque for €20,000 for his work on novel drug candidates for the prevention and treatment of AMD by reducing pathological lipid deposition and inflammation in the eye.

Second prize and a cheque for €10,000 was awarded to Professor Eberhart Zrenner of the University of Tübingen for his research demonstrating how subretinal electronic implants can restore basic visual function in blind retinitis pigmentosa patients.

Praising the high standard of the entries received for the first-ever EURETINA Innovation Awards, Professor Einar Stefansson PhD, chairman of the judging panel, said that the quality of the contributions underscored the dynamic nature of retinal research at the moment.

"This is the first time that we have had these awards and the whole idea behind them is to help innovators and inventors bring their ideas and technology to our attention and to help them forge meaningful partnerships with industry representatives. We very much want to have representatives from industry involved, because the innovators need their help to bring their projects and

inventions to market" he said.

Professor Stefansson said that the judging panel had been surprised to receive so many applications and said that they had been very impressed by the diversity and quality of the entries received for the awards.

In a presentation summarising his research, Professor Rudolf explained that age-related macular degeneration is associated with an abnormal accumulation of lipids within Bruch's membrane of the eye. This lipid build up essentially creates a diffusion barrier between the retinal pigment epithelium and the choriocapillaris, compromising photoreceptor function and resulting in increased oxidative stress and impaired vision.

"This lipid build up is a crucial step in the development and persistence of all AMD forms and therefore it is a potential powerful therapeutic target," he said.

Professor Rudolf said that research has shown that apolipoproteins naturally regulate lipid transport within the bloodstream. With this in mind, synthetic apolipoprotein mimetics, which are functionally related small peptides, have been demonstrated to significantly increase the clearance of plasma cholesterol and remove excess lipid accumulation in vessel walls.

In an animal model of AMD, a synthetic apo-mimetic peptide, known as 4F, was injected into the vitreous cavity of the eye, resulting in a reduction of lipid depositions and thickness of Bruch's membrane, thereby indicating that 4F may be a potentially effective therapeutic and



The nominees for the first ever EURETINA Innovation Awards pictured after the prize-winning presentation

preventive agent for AMD.

"4F induced reduction of Bruch's membrane lipids with a concomitant structural remodelling of Bruch's membrane. No serious adverse events were detected nor were obvious morphological alterations in the eye detected by light microscopy. The proposed mechanism of 4F action may have to do with the acceptance of lipids from accumulated lipoproteins in Bruch's membrane which reduces lipoprotein size and facilitates their removal," he said.

In terms of future perspectives, Dr Rudolf said that the agent could have potential applications in treating early-stage AMD, particularly for those patients at high risk of

developing late-stage AMD, as well as geographic atrophy due to AMD and neovascular AMD.

In a presentation of the second-place entry, Professor Zrenner said that electronic prostheses currently represent the best hope of restoring some visual function to patients with total photoreceptor degeneration.

"The aim is to restore useful visual process in patients that are blind from utter retinal degeneration and to give them back the possibility of recognising or localising objects and achieving self-sustained mobility by implanting a subretinal electrode implant," he said.

Triggering electric stimulation enabled patients to perceive light in

particular shapes and patterns. Visual acuity tests showed that patients were able to recognise foreign objects and in some cases read letters in order to form words. In some cases, bright objects set against a dark background were perceived and localized. One patient, who had been blind for 15 years, surprised investigators when he told them that his name had been misspelled when asked to read it.

Professor Zrenner said that the ongoing European multicentre trial of the implant involving up to 50 patients would be an important step towards eventual commercialisation of the device.



EURETINA Membership

See the benefits!

- Reduced Congress Fees
- Access to Ophthalmologica
- Free Subscription to EuroTimes
- Access to online Members' Area
- Free Members Directory

12 Month Membership Available Now!

Visit: www.euretina.org