The Dawn of Precision Ophthalmology in the Asia Pacific

Synopsis: Heralded as the most significant break- through in biology since PCR, the adaptation of the “CRISPR/Cas” system to mammalian cells is set to revolutionise treatments for inherited disease. The CRISPR/ Cas system, used by bacteria to counter viral intrusion, can cut or edit DNA at specific sites, and the clinical application of this technology opens the very real prospect of anticipa- tory cures to well-defined inherited diseases. While ocular blinding conditions will be at the forefront of these, a trans- formative shift in the Australian biotechnology and healthcare delivery sectors must occur to ensure this becomes reality. Many of the steps for a safe therapeutic pipeline for in vivo CRISPR/Cas therapy, such as accredited mutation detection and patient-specific profiling (e.g. with patient-specific stem cells), are well-established and a clear- pathway of how this technology would be incorporated into clinical care has been developed. With ongoing advances and enhanced manufacturing capabilities, the end of blinding monogenic retinal diseases is in sight