AB046. The retinoblastoma model for translational research

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Background: Our national collaborative research initiative is proposing to develop a common infrastructure for Rb research. We are proposing a novel in vivo Rb model using human Rb cells line.

Methods: The rabbit model has advantages over the mouse models: (I) the larger eye size of rabbits, similar to the human infant eye, permits a more accurate injection of the drugs and evaluation of methods of targeted intraocular drug delivery; (II) the rabbit model demonstrated similar fundus appearance and pathologic features to human Rb, including vitreous seeds of viable tumor when the retinal tumor is mid-sized, which are usually found in the late stage in mouse models. The lack of ability to eliminate vitreous seeds is a major reason of current treatment failures in Group C and D tumors; therefore, the rabbit model of Rb may be used as a model to evaluate the effectiveness and various routes of drug delivery.

Results: This is an implementation of an infrastructure for evaluating therapeutic targets. In addition, this finding enables a variety of pharmacokinetic studies, pharmacodynamic and toxicology studies for new therapeutic agents.

Conclusions: This infrastructure meets the growing concern of practitioners and researchers in the field. The common facility is easily accessible to all VHRN members on request, including requests from other sectors.

Keywords: Retinoblastoma; animal model; rabbit; rat