RGC-5 Cells

Our laboratory previously reported the generation of a retinal ganglion cell 5 (RGC-5) cell line with phenotypic expression of many retinal ganglion cell markers.[1] The RGC-5 cell line has been widely used since then, reproducing several of the original findings and their retinal ganglion cell phenotype.[2–8] ISI Web of knowledge gives 260 references by using "RGC-5" as a search word under topic.

However, last month the first author of the original study[1] published a report[9] that, along with previous studies,[10,11] stated that the RGC-5 line is the same as 661W, a cell line believed to be of cone photoreceptor origin.[12] As the two cell types are very different by molecular phenotyping, it is difficult to reconcile this discrepancy. In fact, the same group who published this recent report[9] previously used RGC-5 cells for other studies, confirming their retinal ganglion cell origin (Dauphin et al. *IOVS* 2003;44:ARVO E-Abstract 2249; Krishnamoorthy et al. *IOVS* 2005;46:ARVO E-Astract 2215; and Refs. 13 and 14). Furthermore, the originator of 661W cells and many others used RGC-5 cells in several published studies[15–18] and reported different phenotypic properties between RGC-5 and 661W cell types. So, what is the true phenotype of 661W cells?

Interestingly, the two coauthors of Krishnamoorthy et al.[9] published a paper on sigma-1 receptor (sigma-1r) in purified retinal ganglion cells,[19] in which they corroborated their coimmunoprecipitation data of sigma-1r with L-type volted gated calcium channels in purified RGCs with that of RGC-5[13] and suggested, "Our co-localization data in purified RGCs is in agreement with the above studies" done with RGC-5 cells.

Furthermore, there were two editorials on authentication of RGC-5 cells,[20,21] suggesting RGC-5 may have never existed. These editorials have totally ignored the vast published literature on their ganglion cells' origin even by some of the coeditors' own studies. As I have been without an active laboratory for the last several years, I am in no position to validate the published reports.

In light of these revelations from the first author of the original study who could not reproduce his own work, it became imperative for me to dissociate myself from the original work and, as a corresponding author, have requested that the original manuscript be retracted from the *Molecular Brain Research* journal.[1] I sincerely regret this incidence and apologize to my colleagues in vision research—and I agree that one has to be very careful while using cultured cells in research.

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