

## VII Tables

**Table 1.** Disappearance of gap junctional coupling between progenitor cells and appearance of voltage-gated Na<sup>+</sup> currents in ganglion cells during retinal regeneration.

Regeneration Stages	Cell type	% of cells which exhibited		
		Na <sup>+</sup> current	gap-junction current*	tracer coupling
Intermediate-I	PC	0 (n= 0/26)	96 (n= 25/26)	73 (n= 16/22)
Intermediate-II	PC	0 (n=0/20)	80 (n=16/20)	71 (n=12/17)
	GC	81 (n=13/16)	0 (n=0/16)	0 (n=0/16)
Intermediate-III	GC	100 (n=9/9)	0 (n=0/9)	0 (n=0/9)
Late	GC	100 (n=11/11)	0 (n=0/11)	0 (n=0/11)
Control	GC	100 (n=17/17)	0 (n=0/17)	31 (n=4/13)

PC : Progenitor cells, GC : Ganglion cells.

n = number of cells with Na<sup>+</sup> current, gap-junction current or tracer coupling / a total number of cells examined.

※ The absence of gap-junction currents was evaluated by slope conductance values less than 0.5 nS measured at the initial phase.

**Table 2.** Development of voltage-gated Na<sup>+</sup> currents and their activation threshold in ganglion cells during retinal regeneration.

Regeneration Stages	Cell type	% of cells which exhibited Na <sup>+</sup> current	Maximum Na <sup>+</sup> current (pA) ±S.E.	Activation voltage (mV) ±S.E.
Intermediate-I	PC	0 (n= 0/12)	–	–
Intermediate-II	PC	0 (n=0/16)	–	–
	GC	80 (n=44/55)	432±54	-45±1
Intermediate-III	GC	100 (n=32/32)	711±76	-50±1
Late	GC	100 (n=42/42)	795±57	-55±1
Control	GC	100 (n=31/31)	953±88	-56±1

n = number of cells with Na<sup>+</sup> current / a total number of cells examined.

– : no Na<sup>+</sup> currents.

Other abbreviations are the same as those in Table 1.

**Table 3.** Composition of external solutions.

Composition (mM)	A (control)	B (for AMPA)	C (for AMPA with antagonist)	D (for NMDA)	E (for NMDA with antagonist)	F (for GABA, glycine)
NaCl	100	100	100	100	100	100
KCl	3.7	3.7	3.7	3.7	3.7	3.7
CaCl <sub>2</sub>	3	3	3	3	3	3
HEPES	5	5	5	5	5	5
TEA-Cl	0	18	18	18	18	18
MgCl <sub>2</sub>	1	1	1	0	0	1
CoCl <sub>2</sub>	0	3	3	0	0	3
NMDG-HCl	24	0	0	6	6	0
Glucose	0	3	3	0	0	3
glycine	0	0	0	0.001	0.001	0
cyclothiazide	0	0.1	0.1	0	0	0
strychnine	0	0.01	0.01	0.01	0.01	0
picrotoxin	0	0.2	0.2	0.2	0.2	0
CNQX	0	0	0.05	0*	0*	0
DL-AP7	0	0	0	0	0.1	0

The pH was adjusted to 7.5 with 0.3 N NMDG. The osmolality were adjusted to 255 mOsm.

\*: CNQX (0.01 mM) was added to solution D in the case of a presence of activity of AMPA receptors.