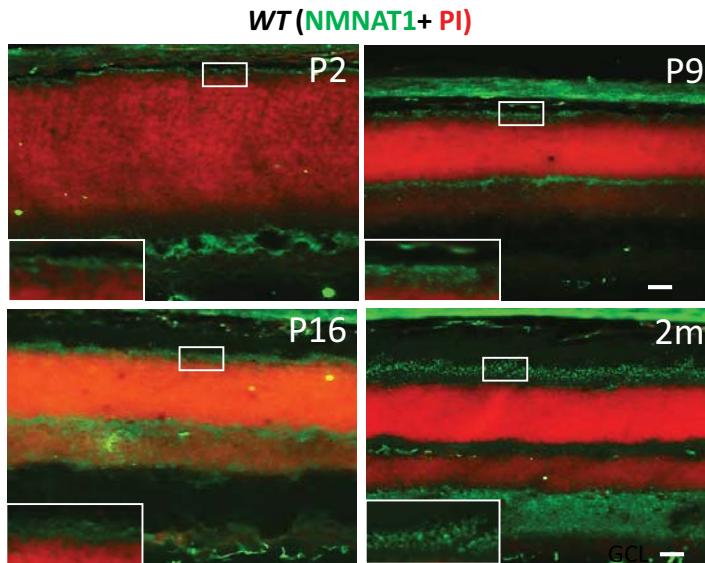
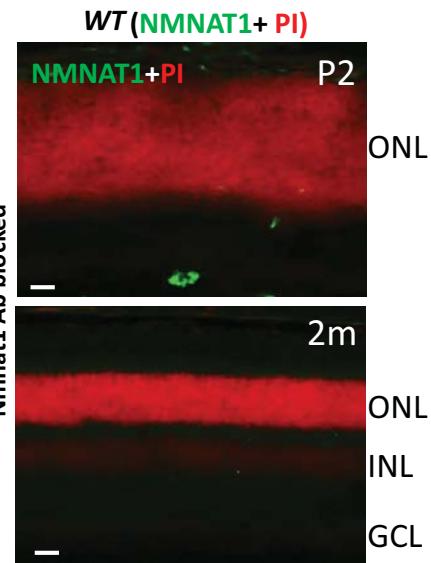


Fig. 1

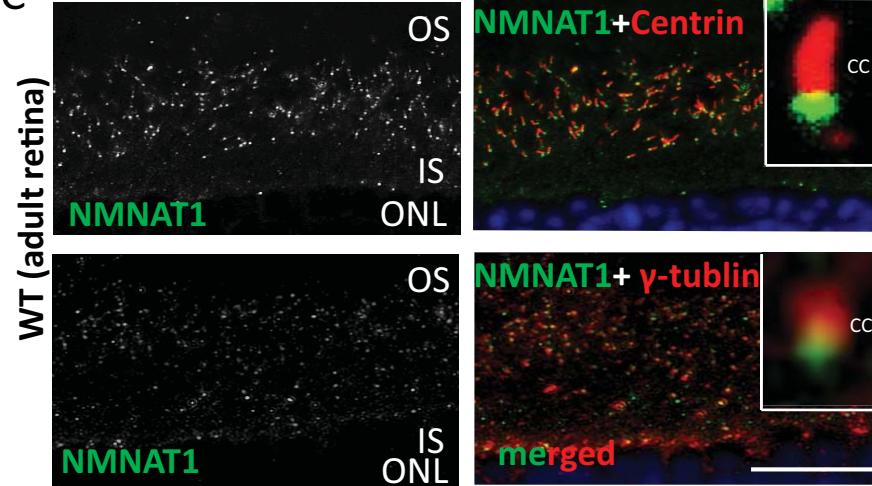
A



B



C



D

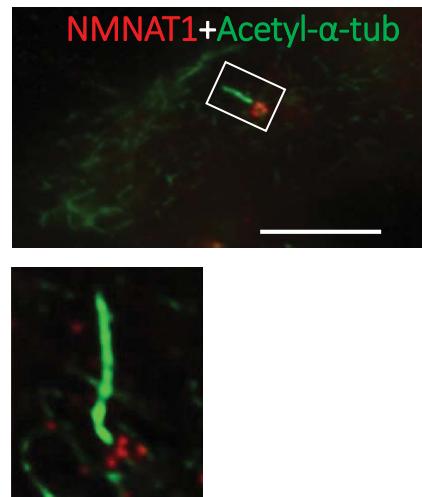
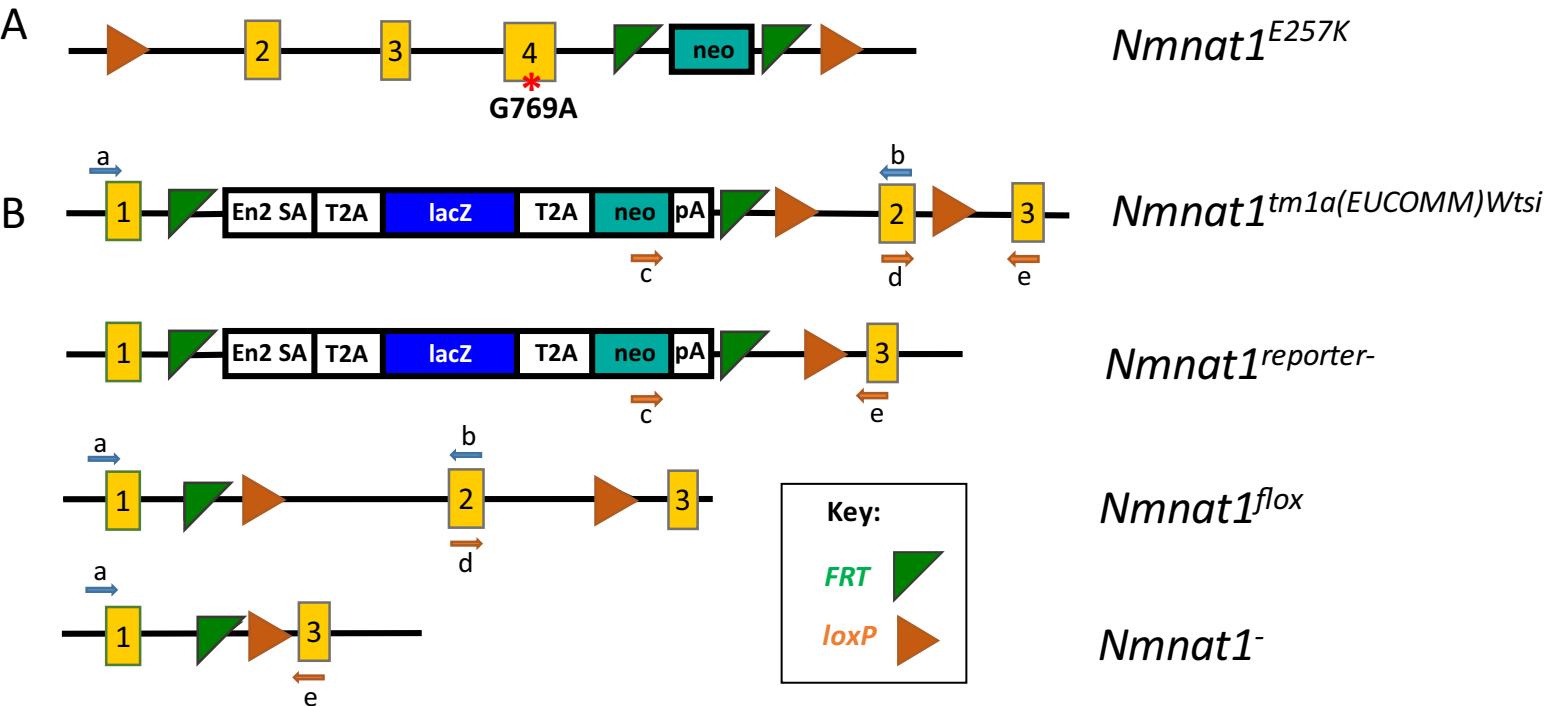
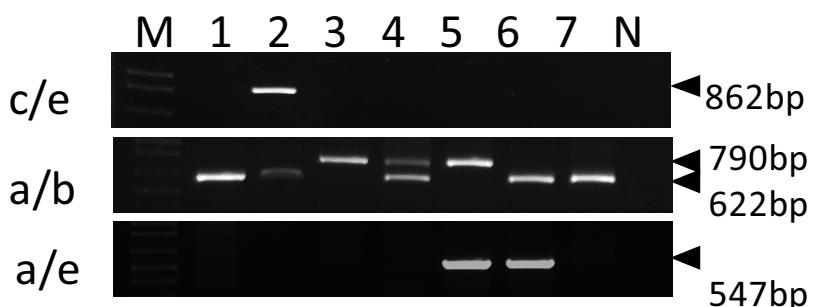


Fig. 2

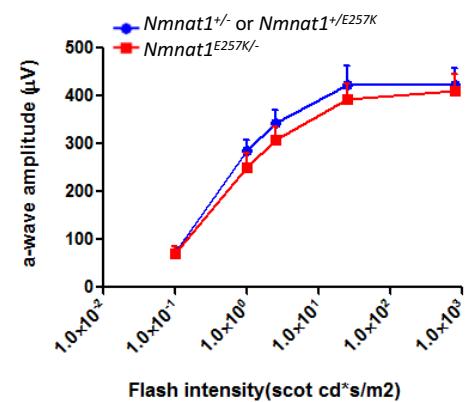
**C**

- M: 1kb plus DNA ladder
- 1: *Nmnat1*^{tm1a(EUCOMM)Wts/+}
- 2: *Nmnat1*^{reporter-/+}
- 3: *Nmnat1*^{flox/flox}
- 4: *Nmnat1*^{flox/+}
- 5: *Nmnat1*^{flox/-}
- 6: *Nmnat1*^{+/-}
- 7: *Nmnat1*^{+/-}
- N: non-template control

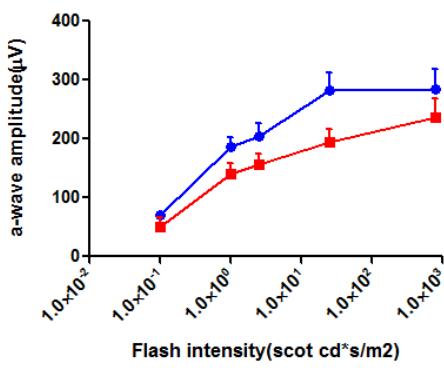
Fig. 3

A

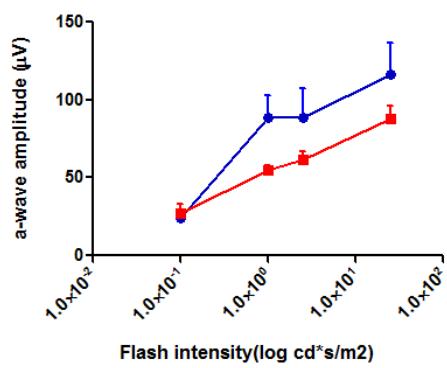
1 mo.



5 mo.

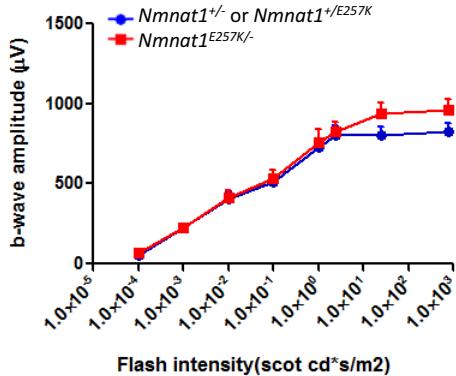


12 mo.

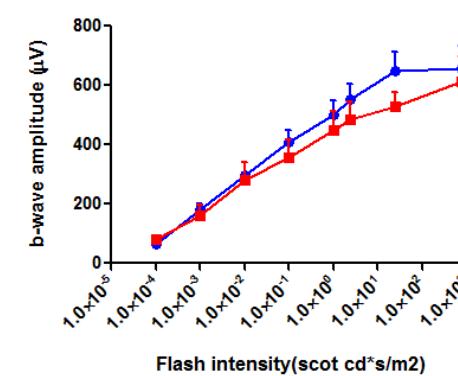


B

1 mo.



5 mo.



12 mo.

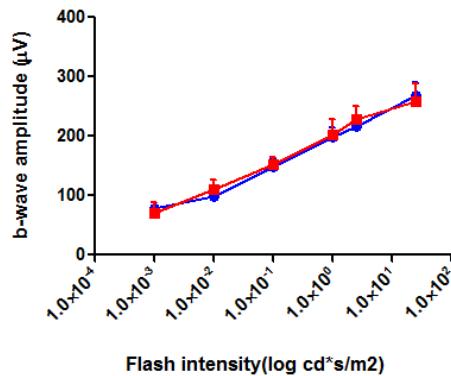
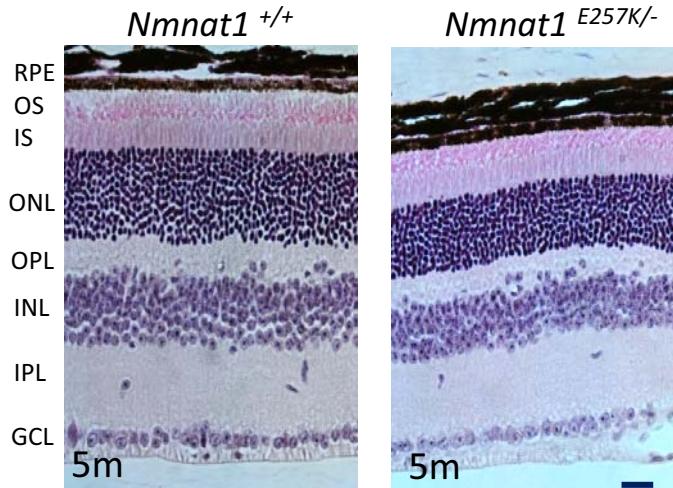
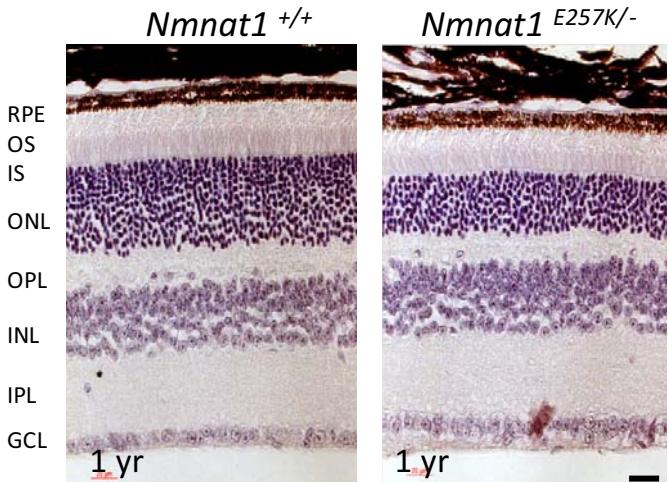


Fig. 4

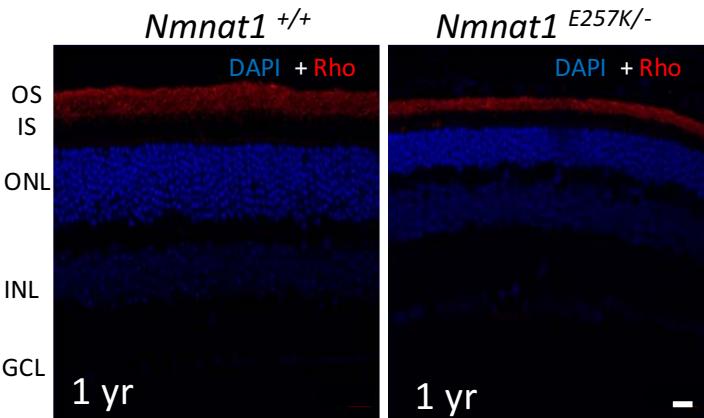
A



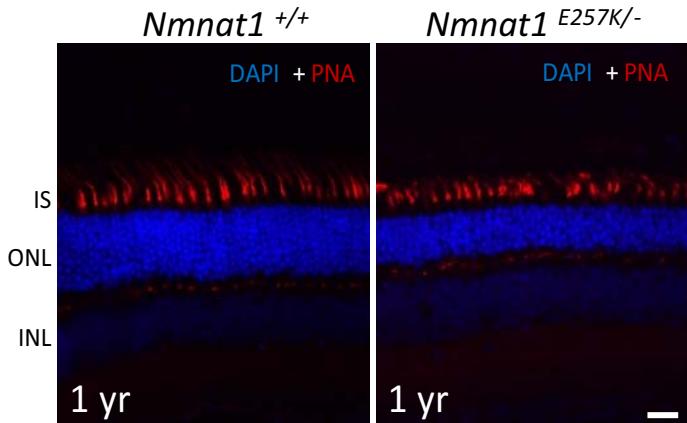
B



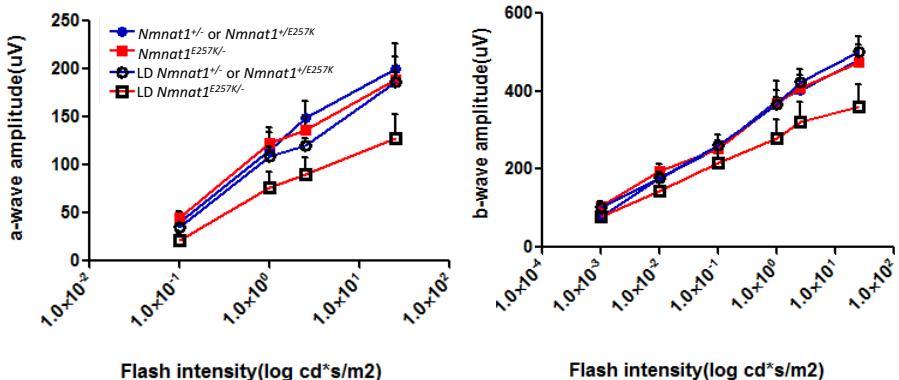
C



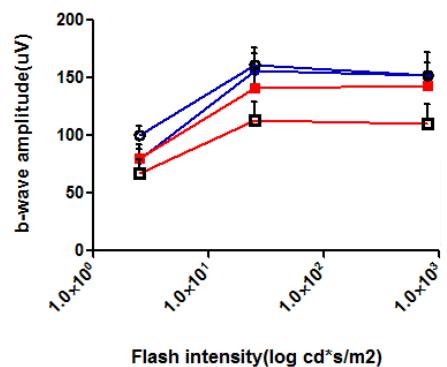
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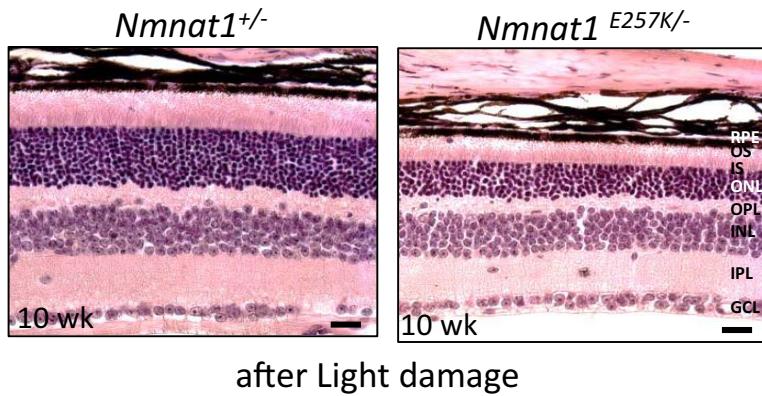
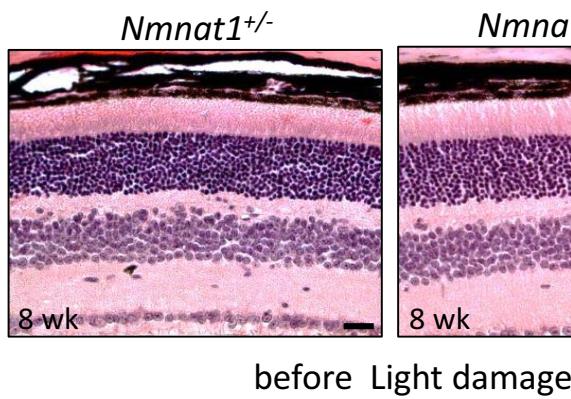
A



B



C



D

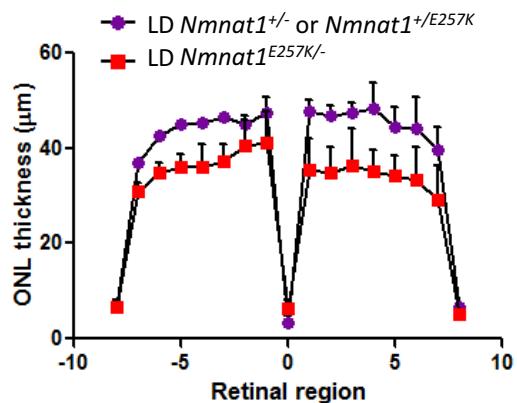
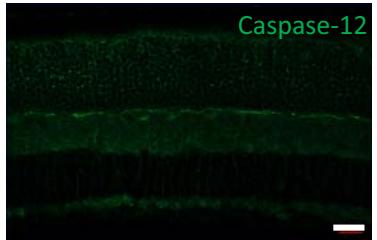


Fig. 6

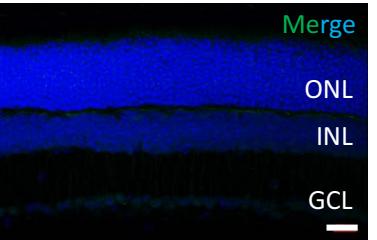
A

Nmnat1^{+/−}

Caspase-12

*Nmnat1*^{+/−}

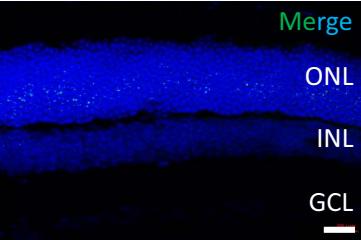
Merge

ONL
INL
GCL*Nmnat1*^{E257K/−}

Caspase-12

*Nmnat1*^{E257K/−}

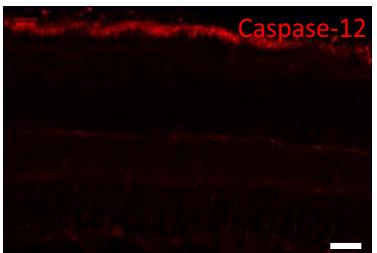
Merge

ONL
INL
GCL

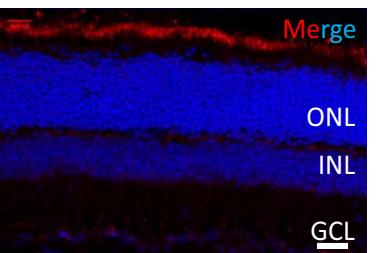
B

Nmnat1^{+/−}

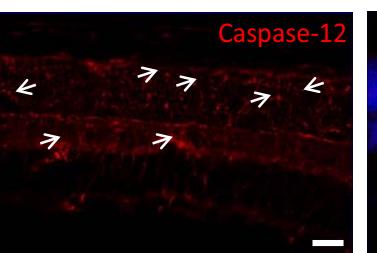
Caspase-12

*Nmnat1*^{+/−}

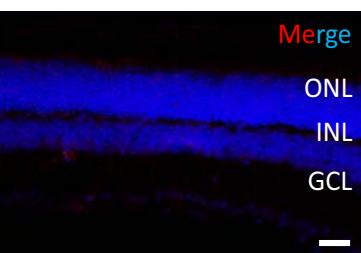
Merge

ONL
INL
GCL*Nmnat1*^{E257K/−}

Caspase-12

*Nmnat1*^{E257K/−}

Merge

ONL
INL
GCL

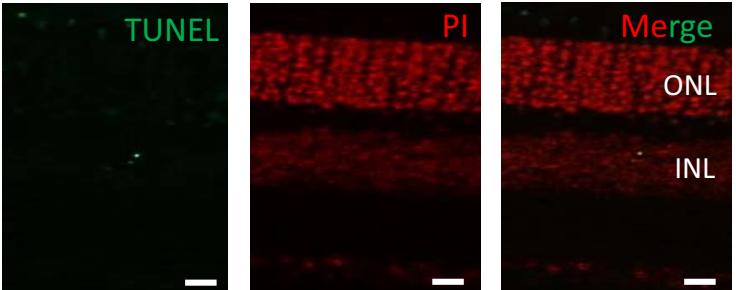
C

Nmnat1^{+/−}

TUNEL

PI

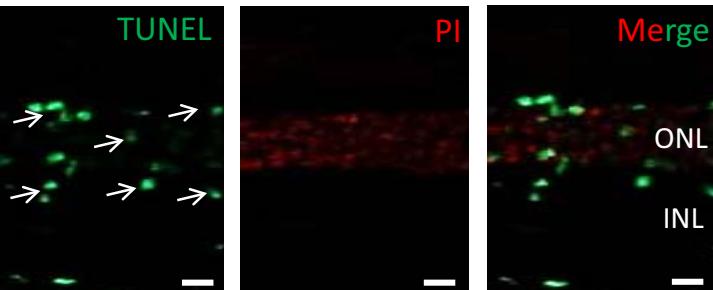
Merge

ONL
INL*Nmnat1*^{E257K/−}

TUNEL

PI

Merge

ONL
INL

A

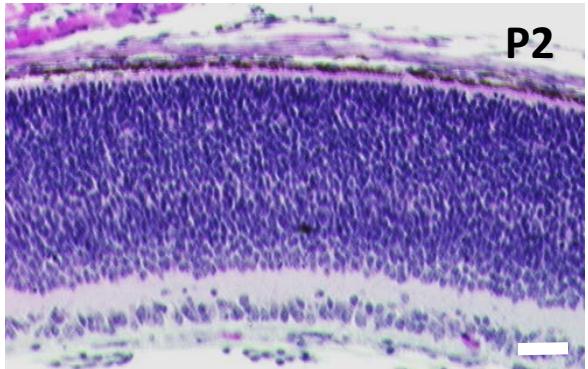
Nmnat1^{flx/+}

P2

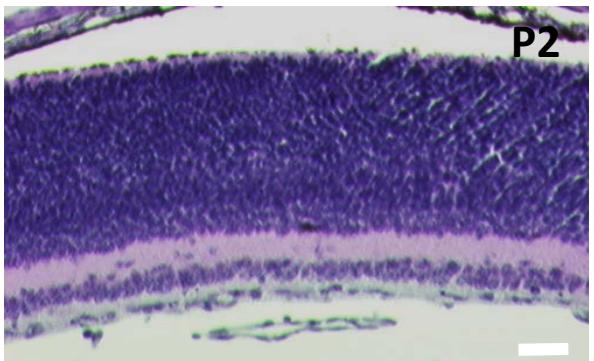
RPE

INL

GCL

*Nmnat1*^{flx/-;Chx10-Cre^{+/}}

P2



B

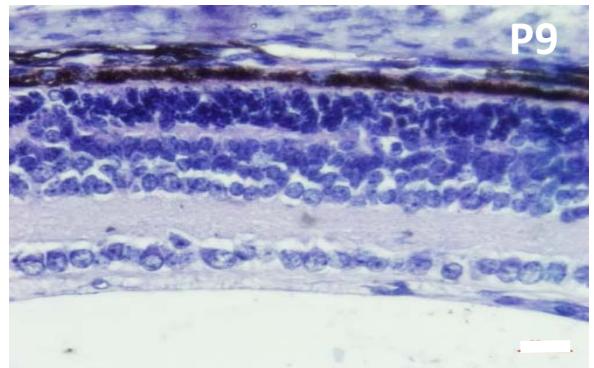
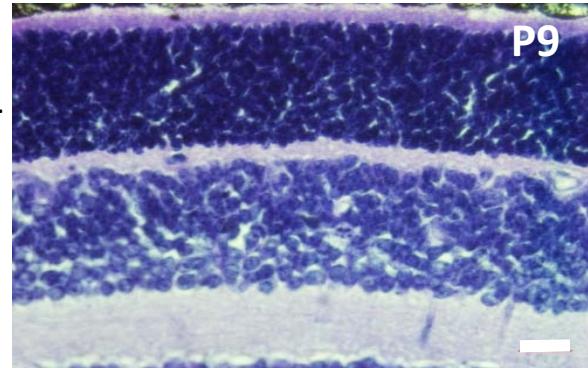
RPE

ONL

INL

GCL

P9



C

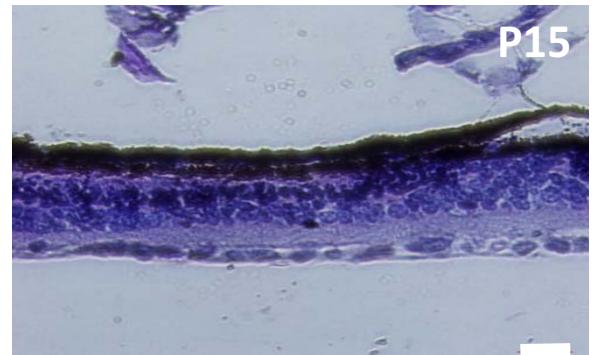
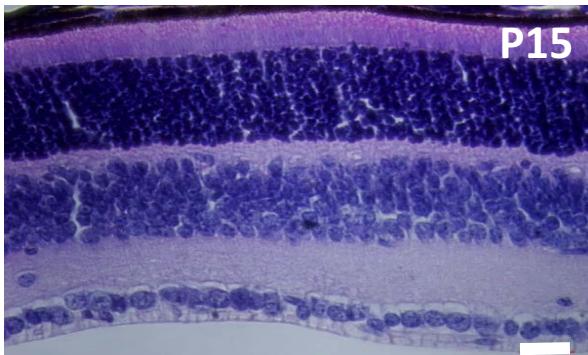
RPE

ONL

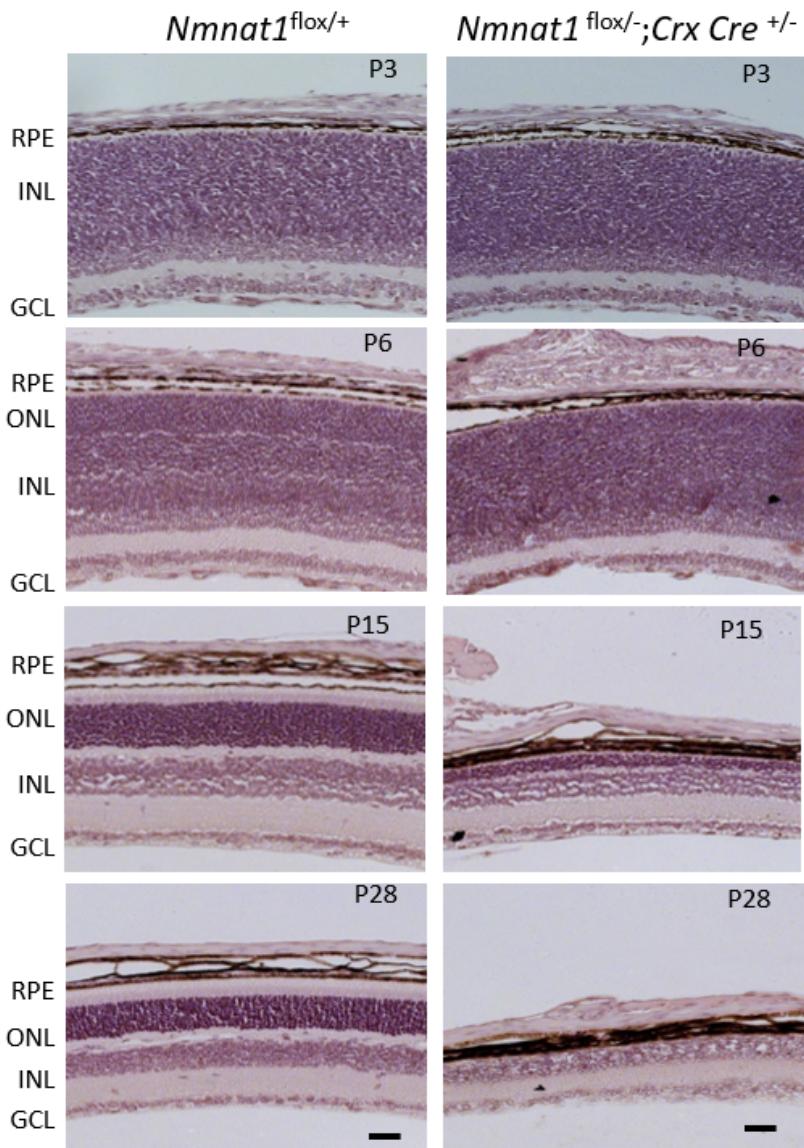
INL

GCL

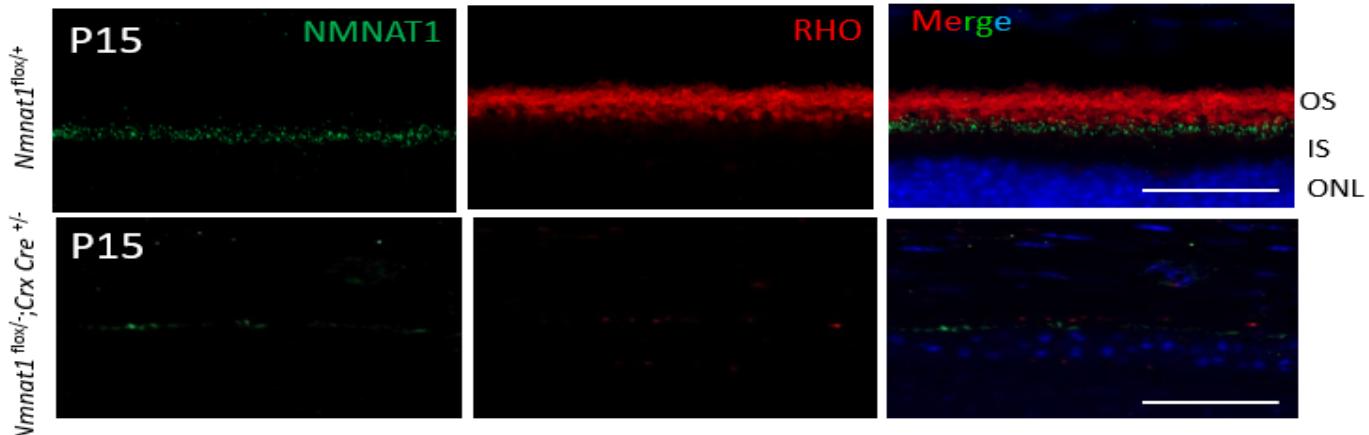
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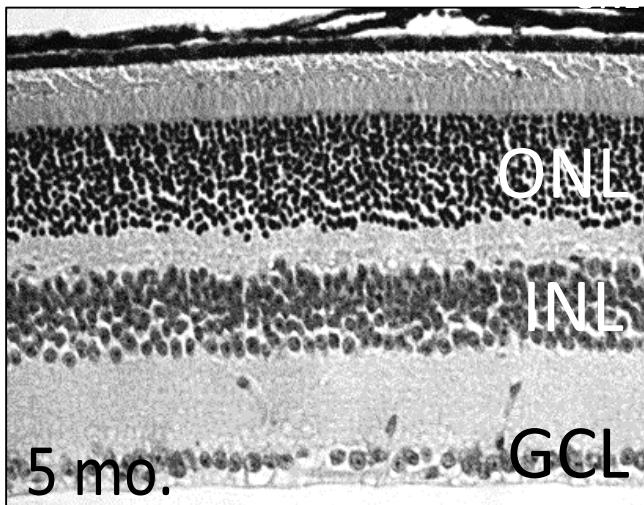
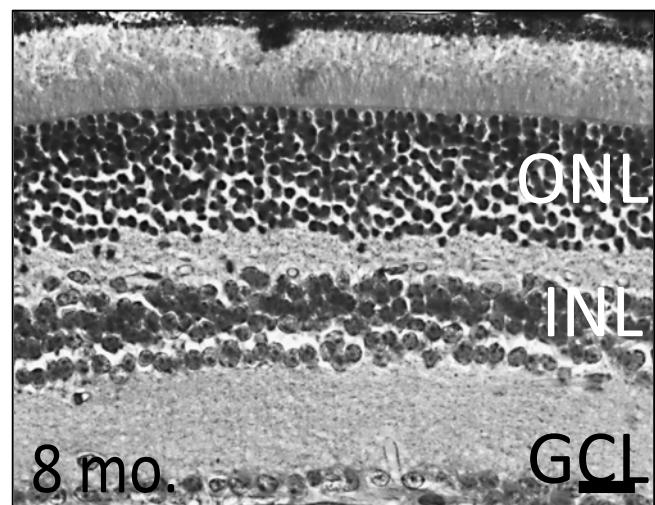
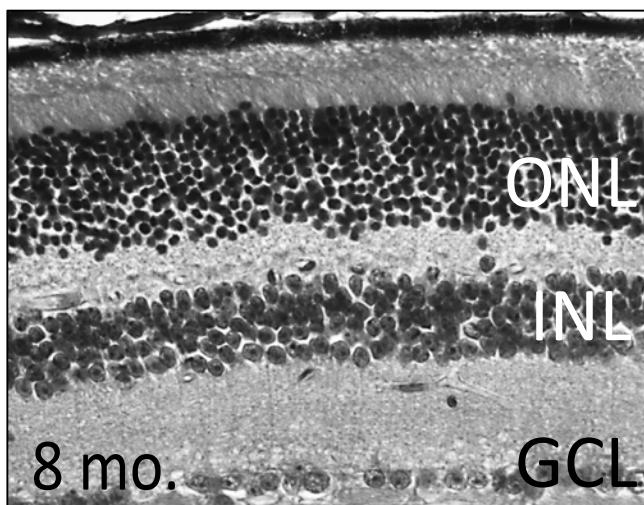
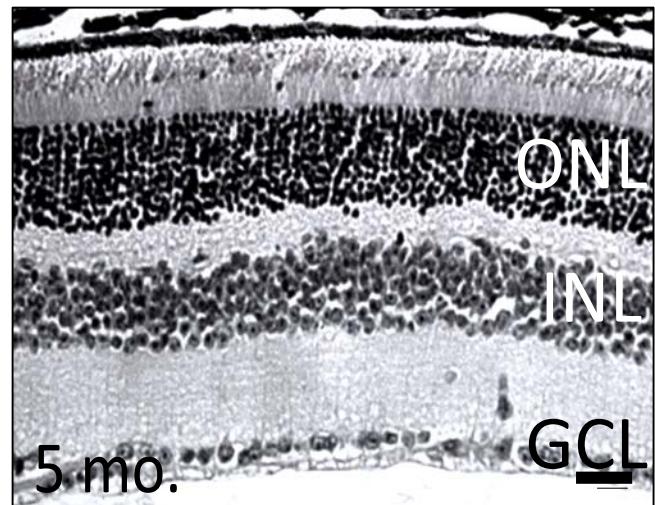
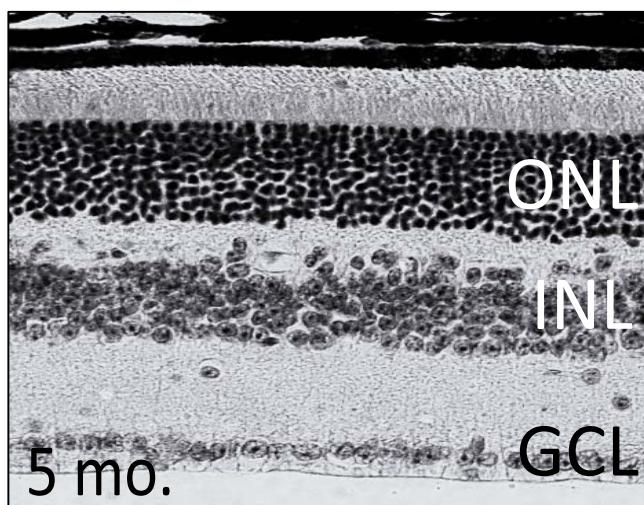
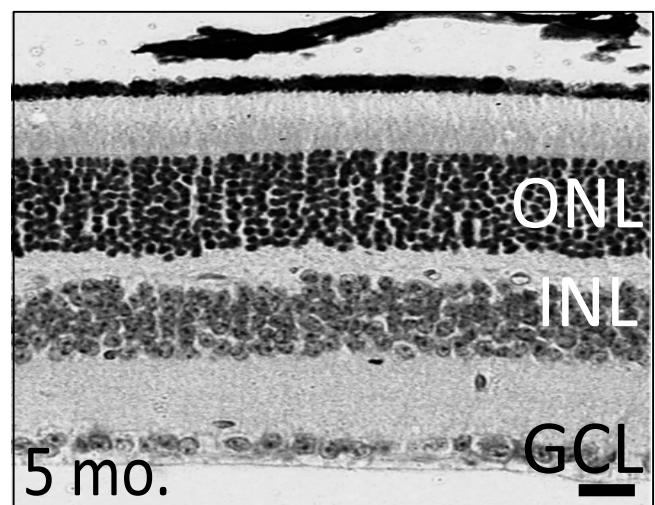


A



B



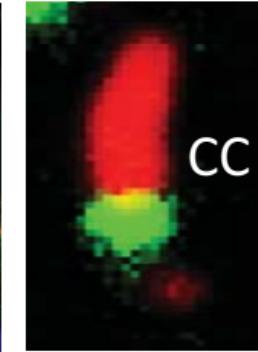
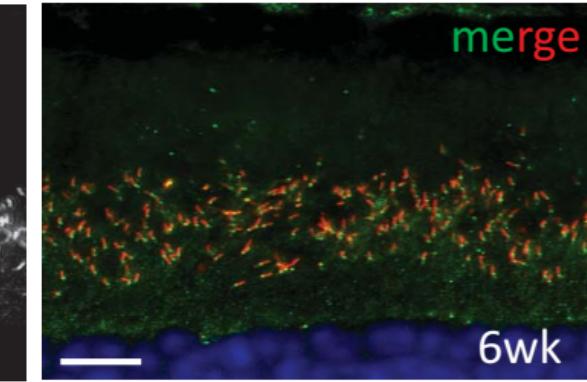
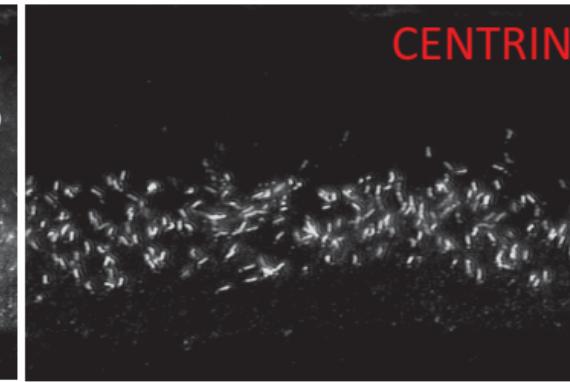
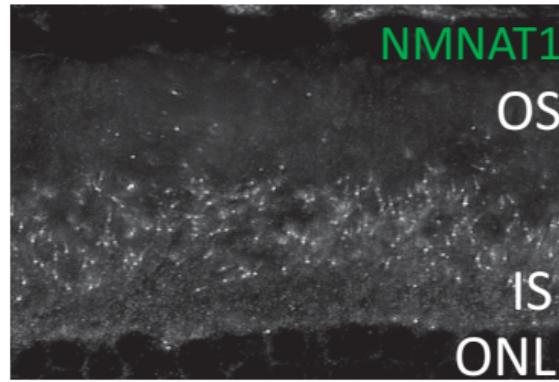
A*Nmnat1* $^{+/+}$ *Nmnat1* $E257K/E257K$ **B***Nmnat1* $E257K/E257K$ *Nmnat1* $E257K/E257K$ 

Before LD

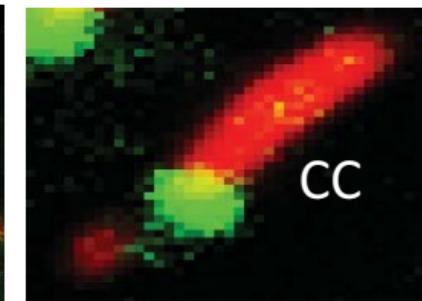
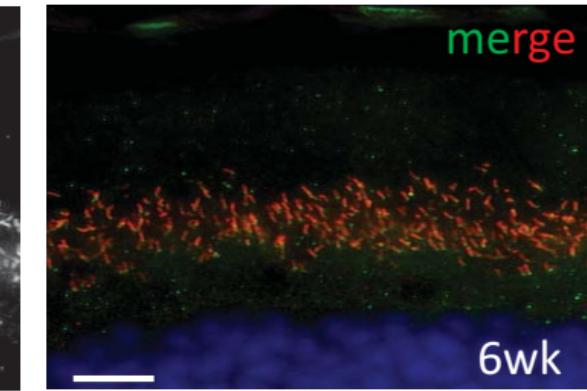
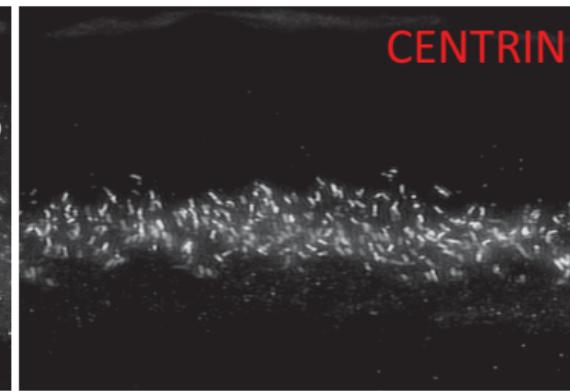
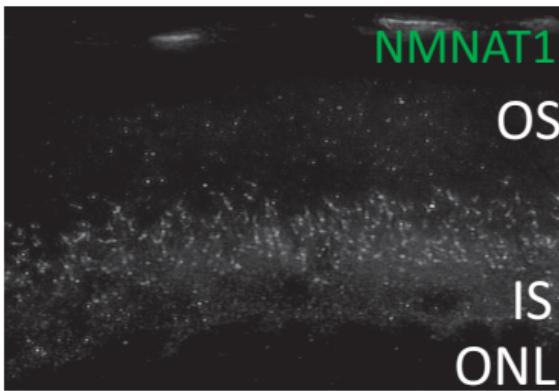
After LD

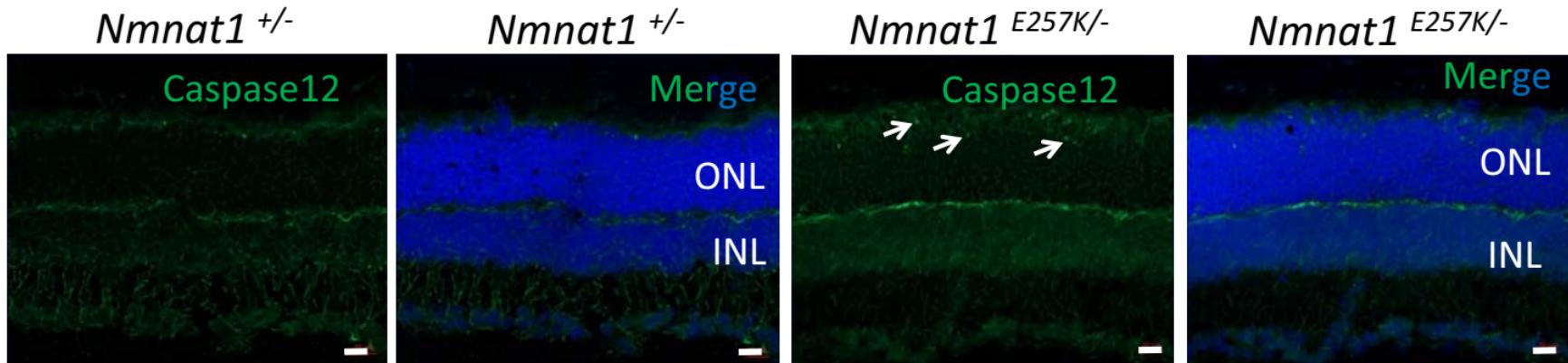
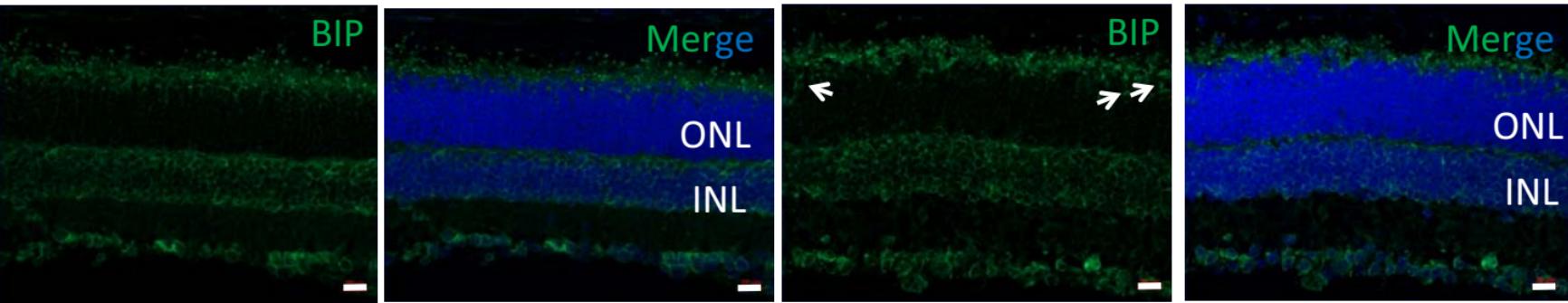
Supp. Fig. 2

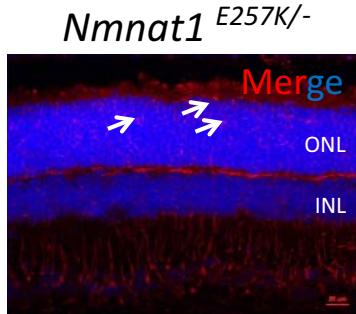
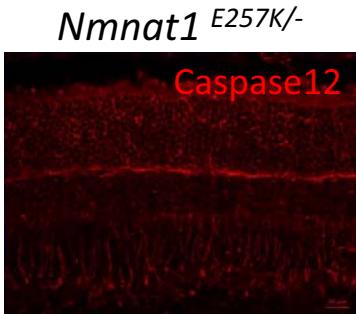
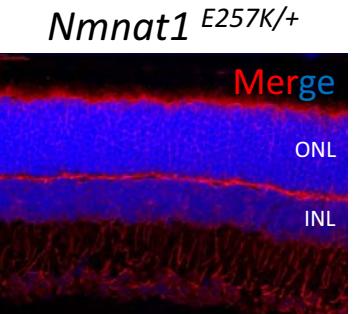
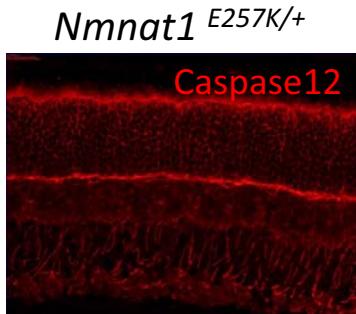
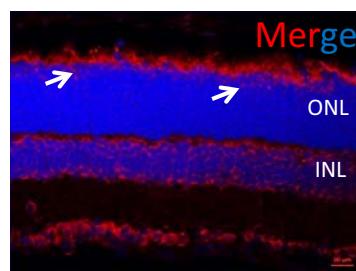
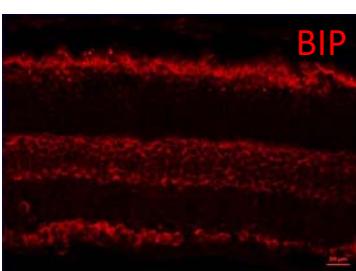
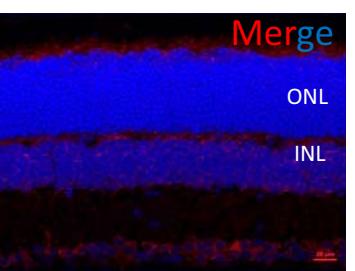
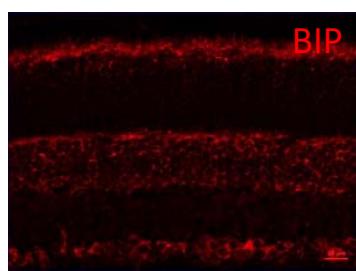
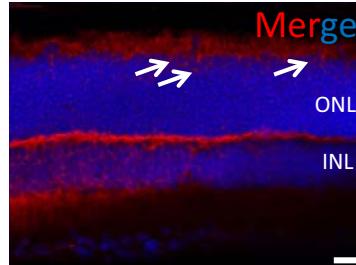
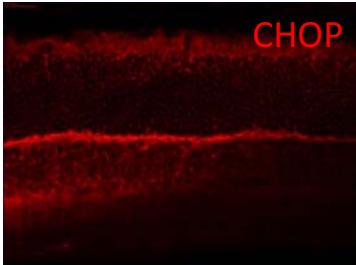
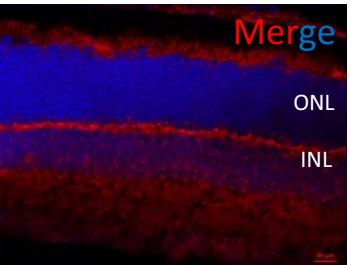
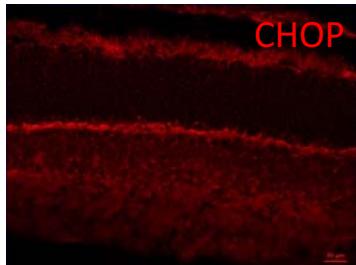
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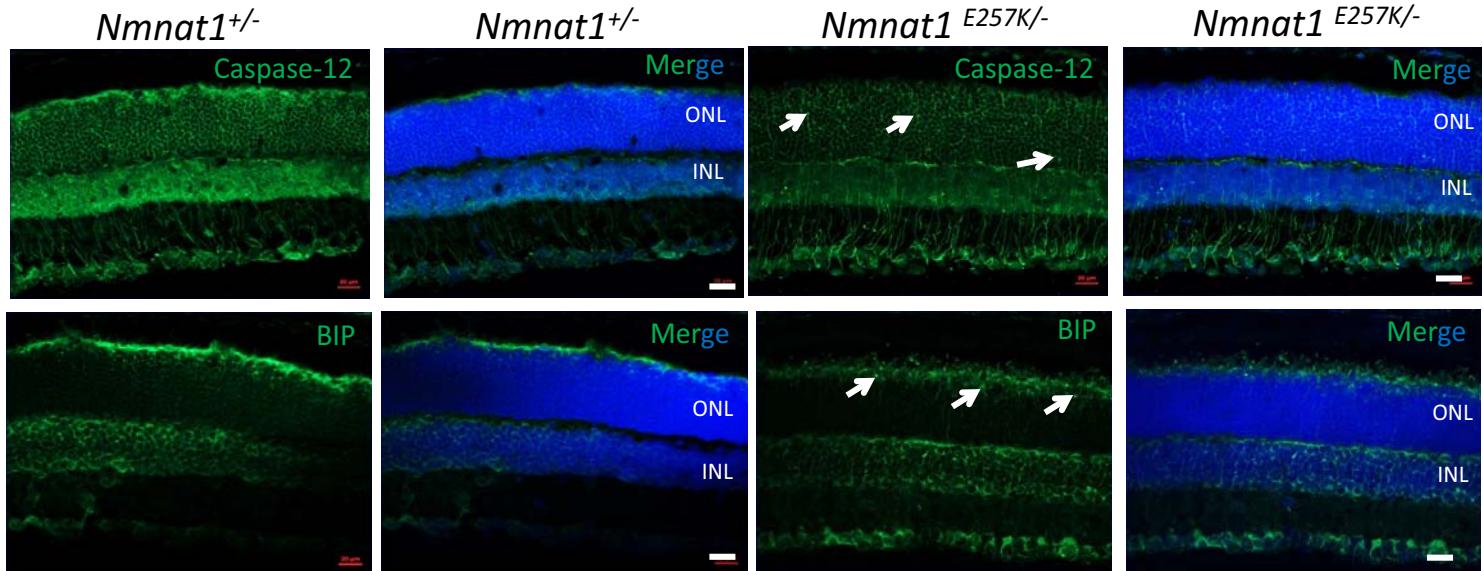
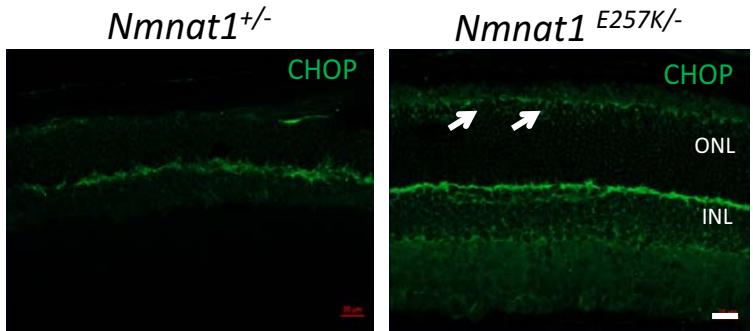


Nmnat1^{E257K}/-

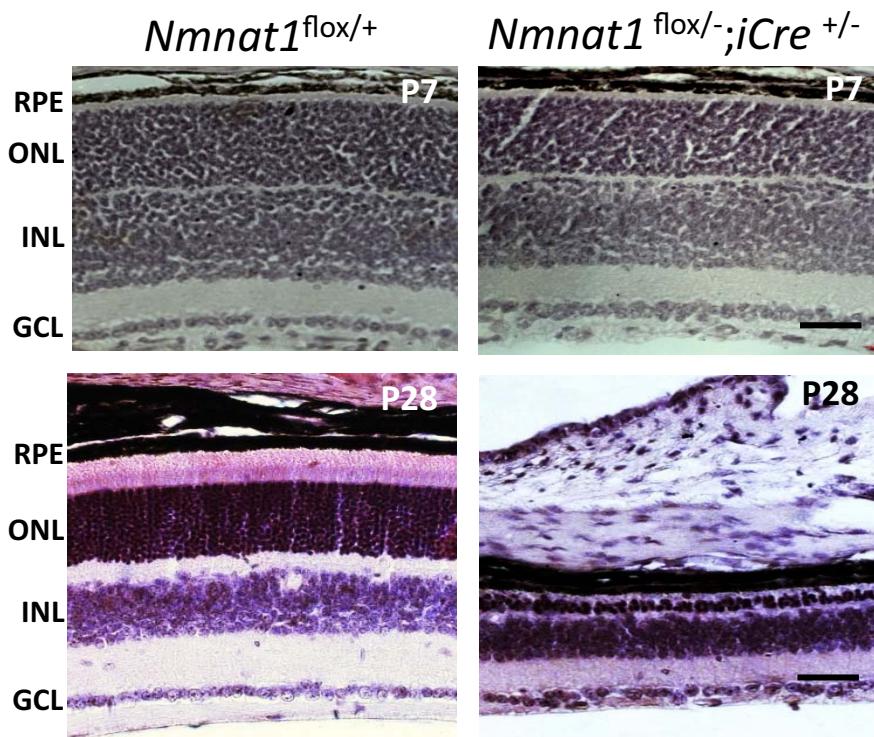


A**B**

A**B****C**

A**B**

A



B

