Supplemental Information for: *NanoSIMS observations of protein turnover in retinal cells*

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Statistical Tables

Tables S1, S2, and S3 below show the results from statistical testing. All statistical tests used were two sample t-tests assuming equal variances. All three tables display the results of a one-tailed test, which tests whether the second group has a mean statistically higher than that of the first group (H_0: $\mu_2 \leq \mu_1$). The null hypothesis is considered rejected when $p < 0.05$ ($\alpha = 0.95$) and the t-statistic is negative.

TABLE S1. Results from statistical testing between different cellular regions for each treatment.

	5 day		14 day		21 day		60 day	
Test	**p**	**t stat**	**p**	**t stat**	**p**	**t stat**	**p**	**t stat**
ONL Nuc ≤ ONL Cyt	0.000	-18.0	0.000	-11.7	0.000	-9.6	0.000	-7.2
ONL Nuc ≤ INL Nuc	0.062[1]	-1.6	0.097[1]	-1.3	0.145[1]	-1.1	0.422[1]	-0.2
INL Nuc ≤ INL Cyt	0.000	-5.4	0.000	-5.4	0.000	-9.2	0.000	-5.3
ONL Cyt ≤ INL Cyt	0.001	3.3[2]	0.125[1]	1.2	0.045	1.7[2]	0.250[1]	0.7
ONL Nuc ≤ OPL	0.000	-14.3	0.000	-14.9	0.000	-11.5	0.000	-14.2
INL Nuc ≤ OPL	0.000	-11.1	0.000	-9.3	0.000	-9.2	0.000	-8.8

[1] the trend is not statistically significant

[2] the trend is significant in the opposite direction ($\mu_2 \leq \mu_1$).

TABLE S2. Results from statistical testing between different experimental time points for each cellular region.

	ONL Nucleus		ONL Cytosol		INL Nucleus		INL Cytosol		OPL	
Test	**p**	**t stat**	**p**	**t stat**	**p**	**t stat**	**p**	**t stat**	**p**	**t stat**
5 days ≤ 14 days	0.000	-19.8	0.000	-21.2	0.000	-18.3	0.000	-14.7	0.000	-13.2
14 days ≤ 21 days	0.000	-3.4	0.000	-4.1	0.004	-3.0	0.015	-2.4	0.009	-2.7
21 days ≤ 60 days	0.000	-11.3	0.000	-9.4	0.000	-8.62	0.000	-10.4	0.000	-5.8

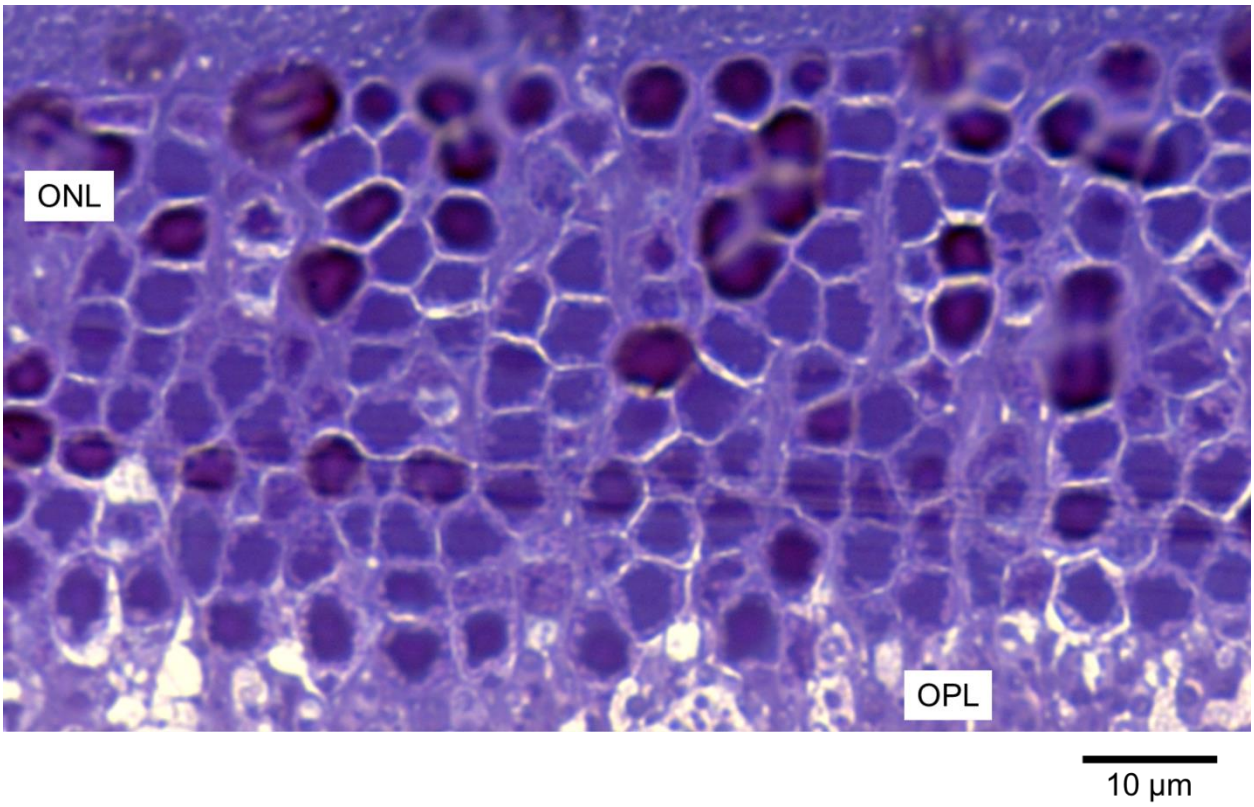
TABLE S3. Results from statistical testing between different cellular regions in the P56 mice.

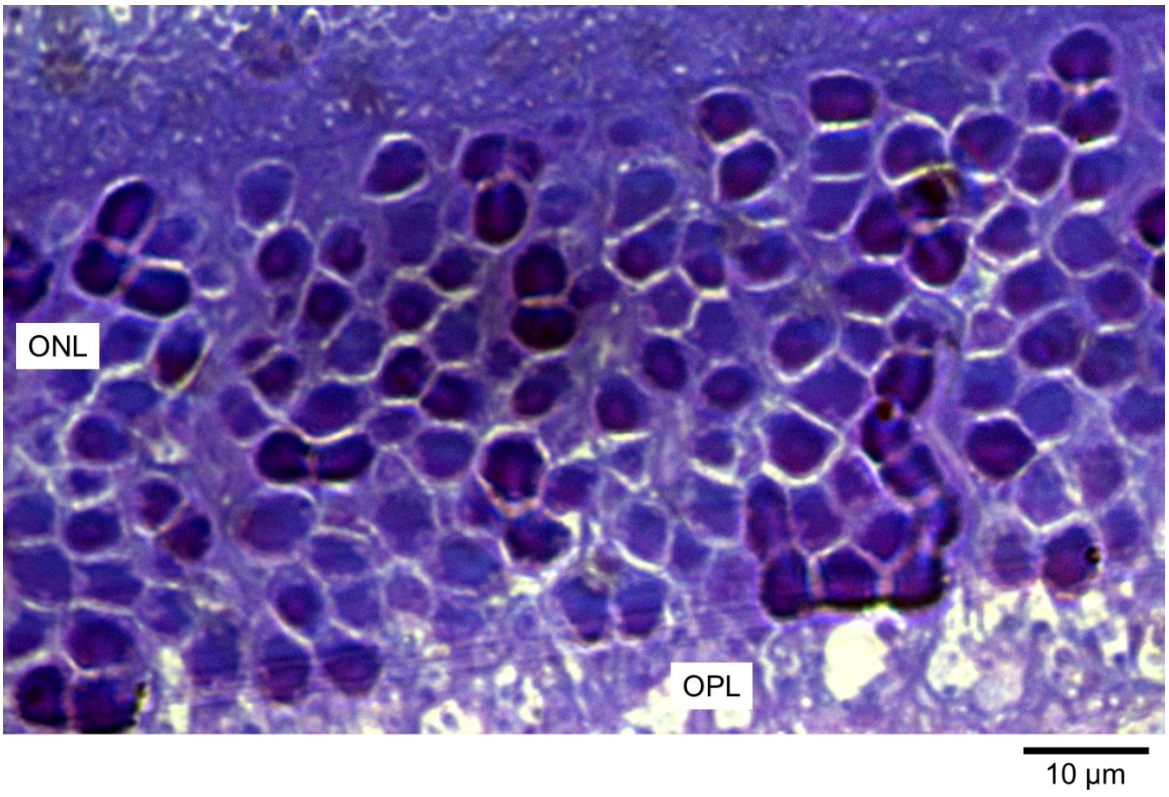
Test	**p**	**t stat**
ONL ≤ INL	0.000	-23.3
ONL ≤ OPL	0.000	-41.1
INL ≤ OPL	0.000	-17.3

Histology Images

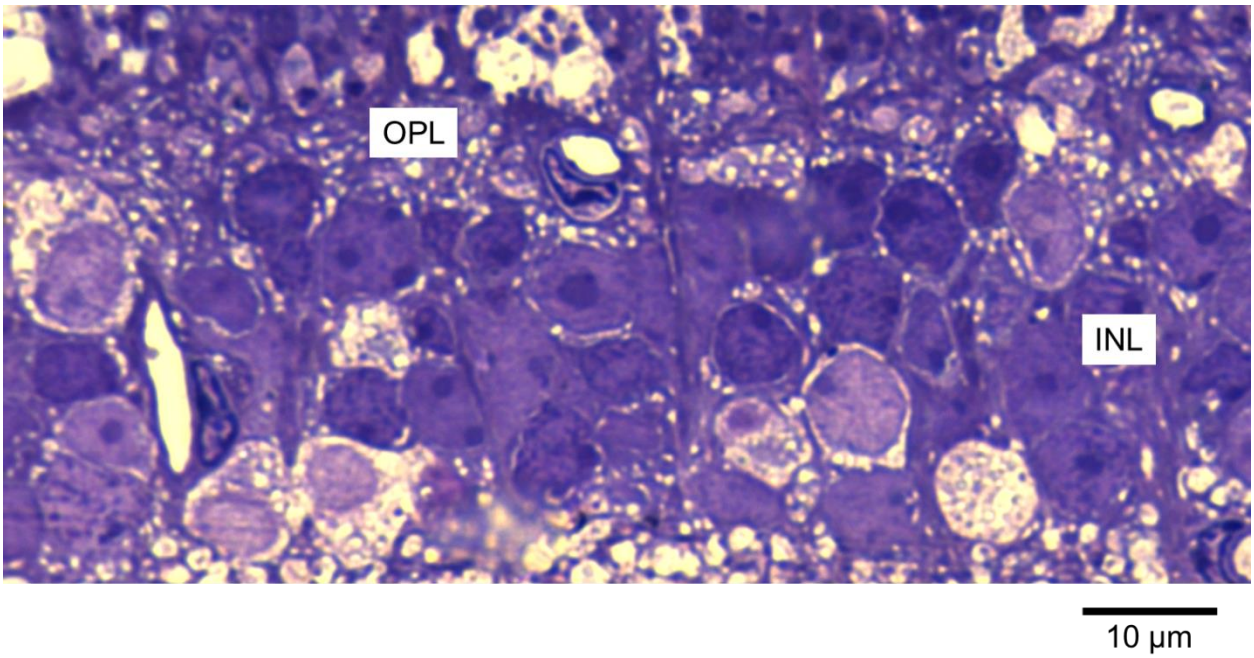
All histology images were obtained using an Axio Imager M2 upright microscope (Zeiss, Germany), and a 100x ACHROPLAN water-immersion objective (Zeiss, Germany). Samples were immersed in ddH2O for analysis.

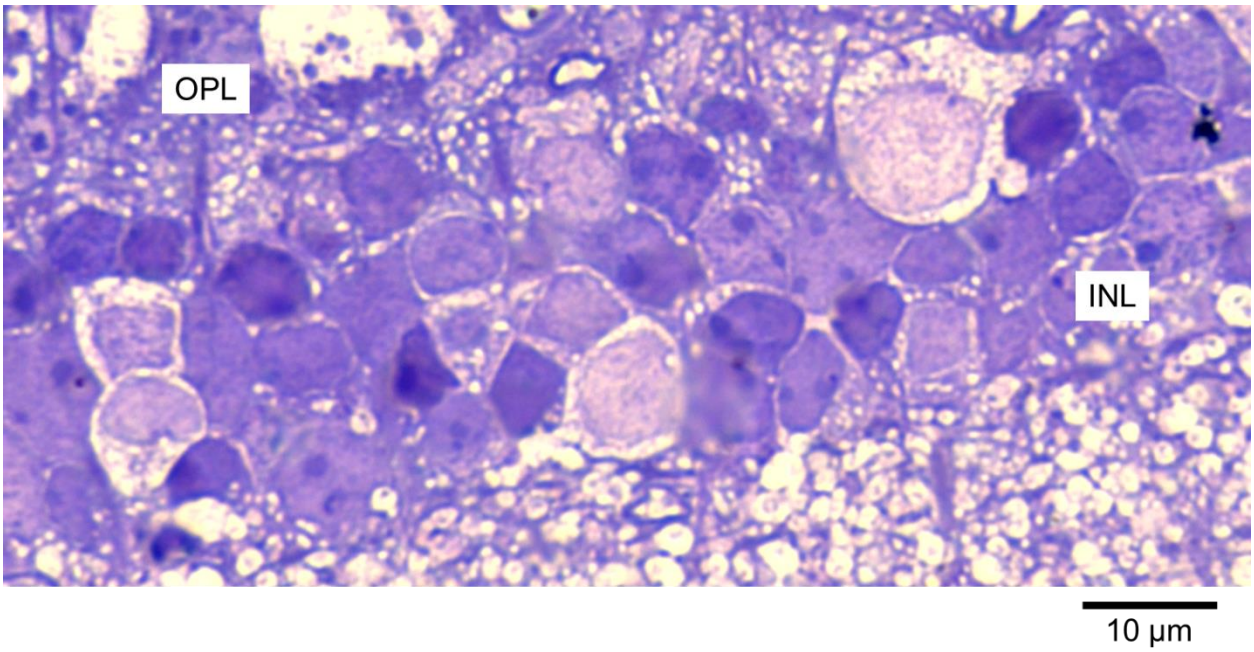
5 days ONL



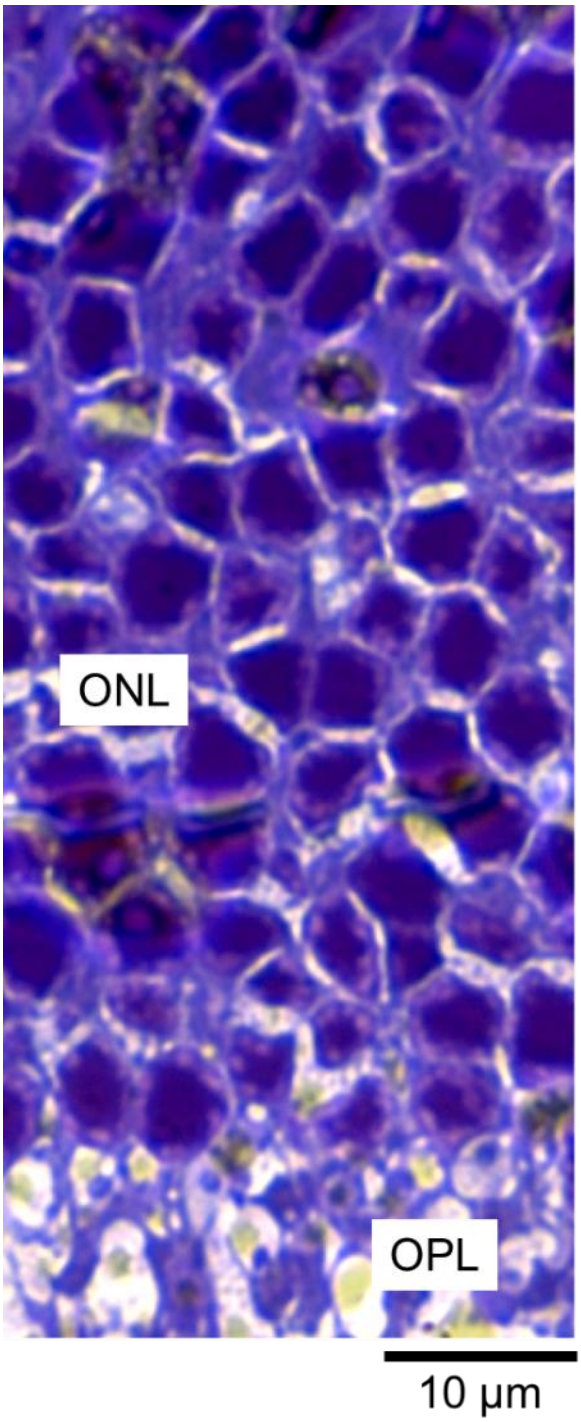


5 days INL

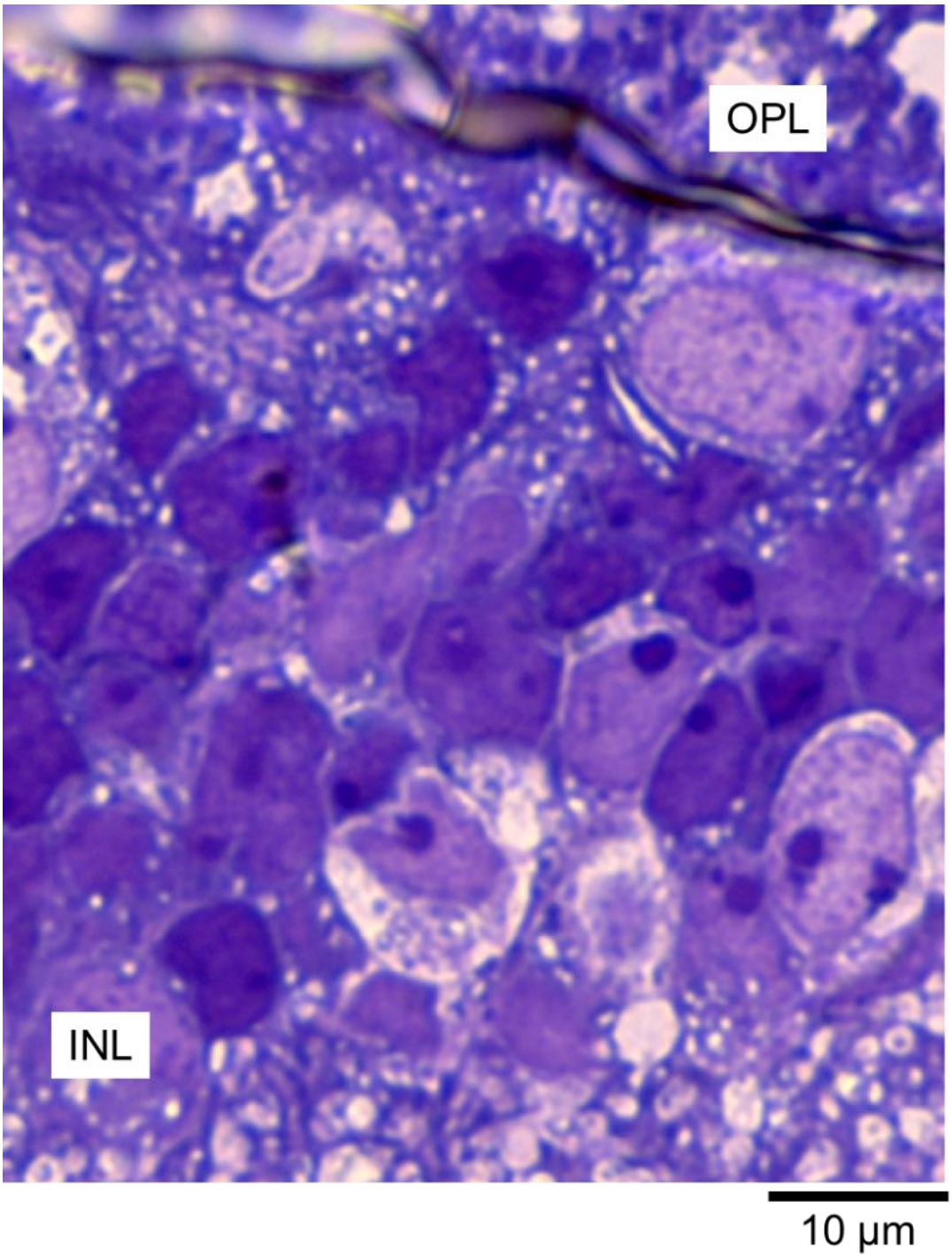




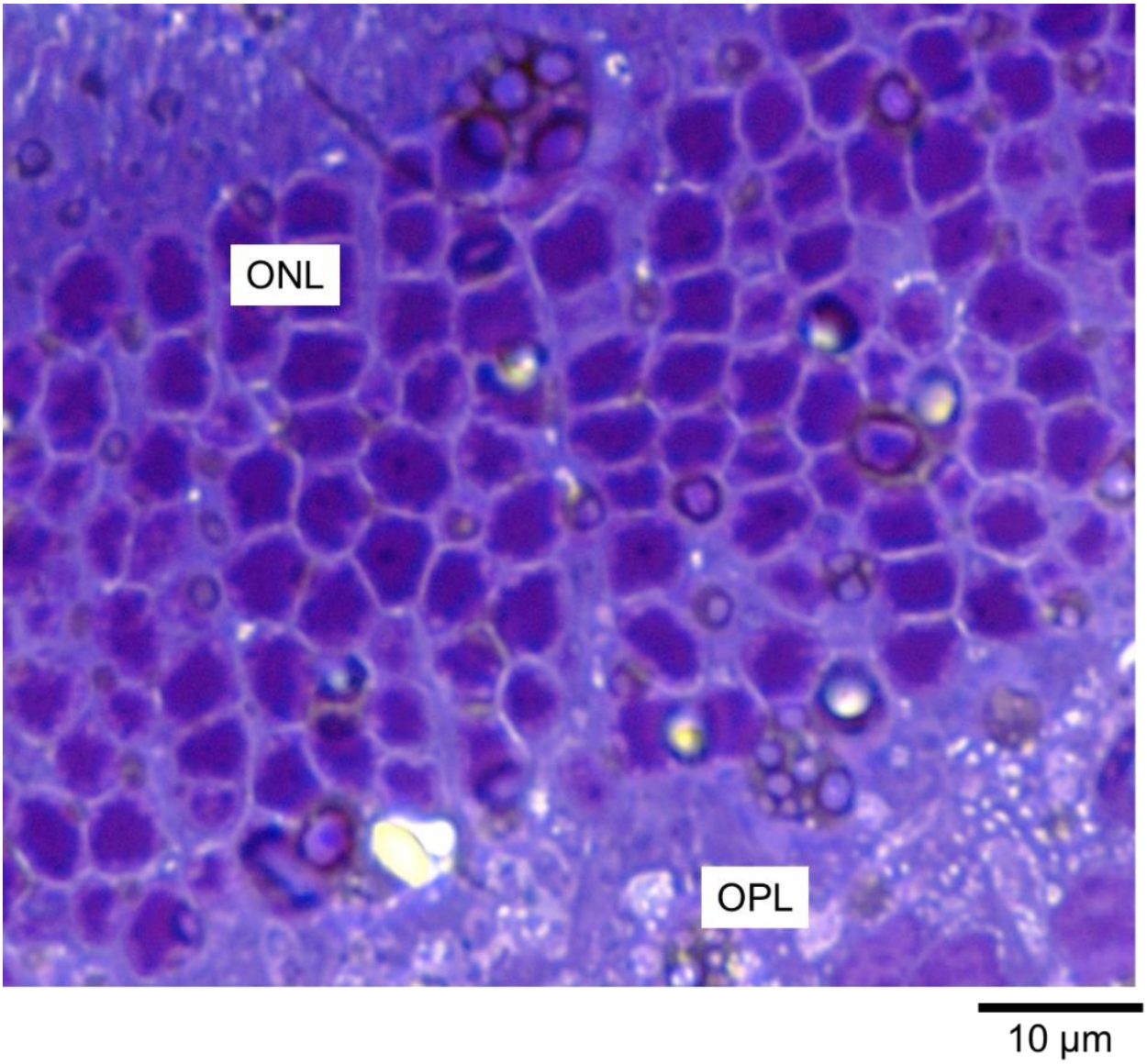
14 days ONL



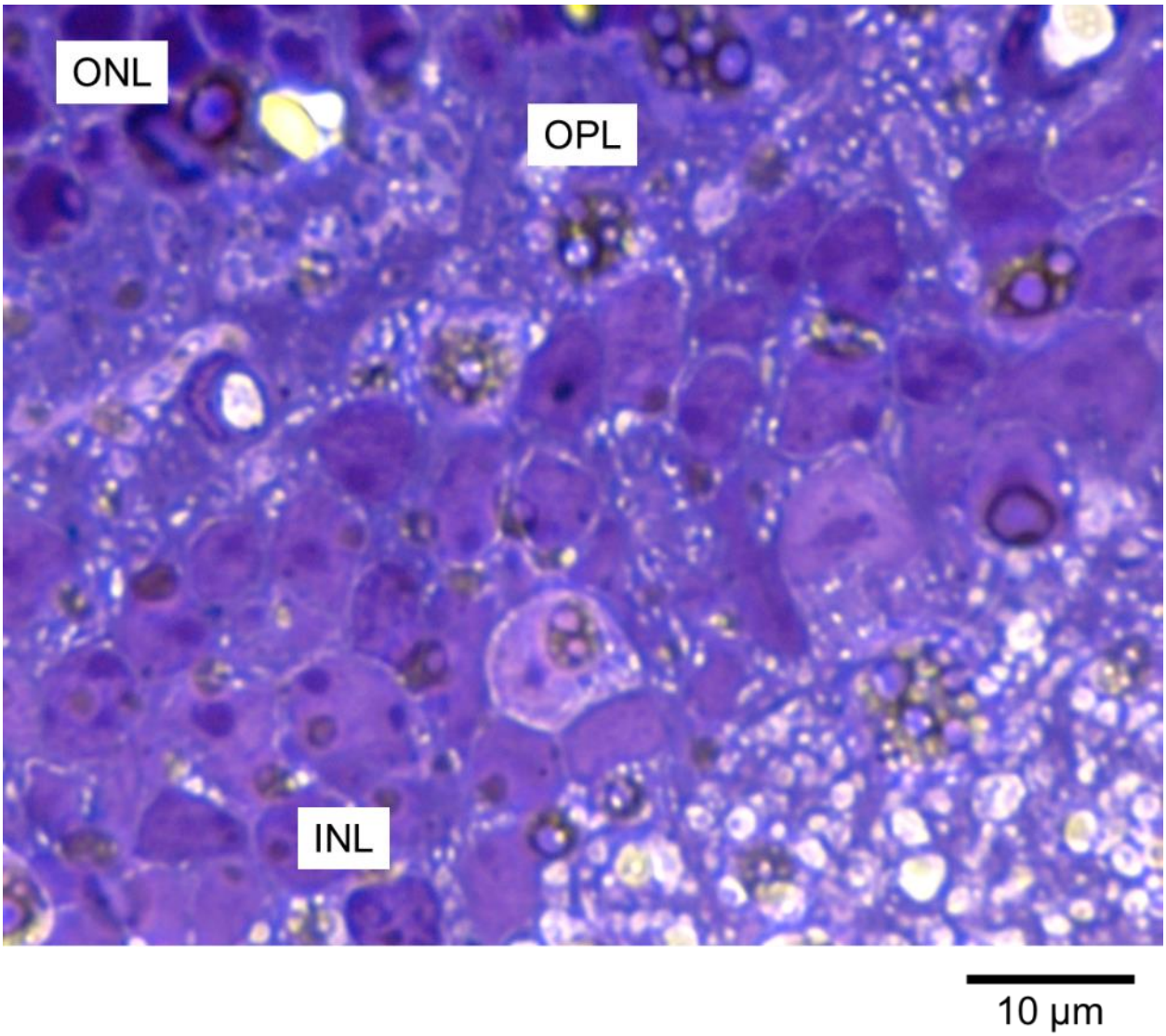
14 days INL

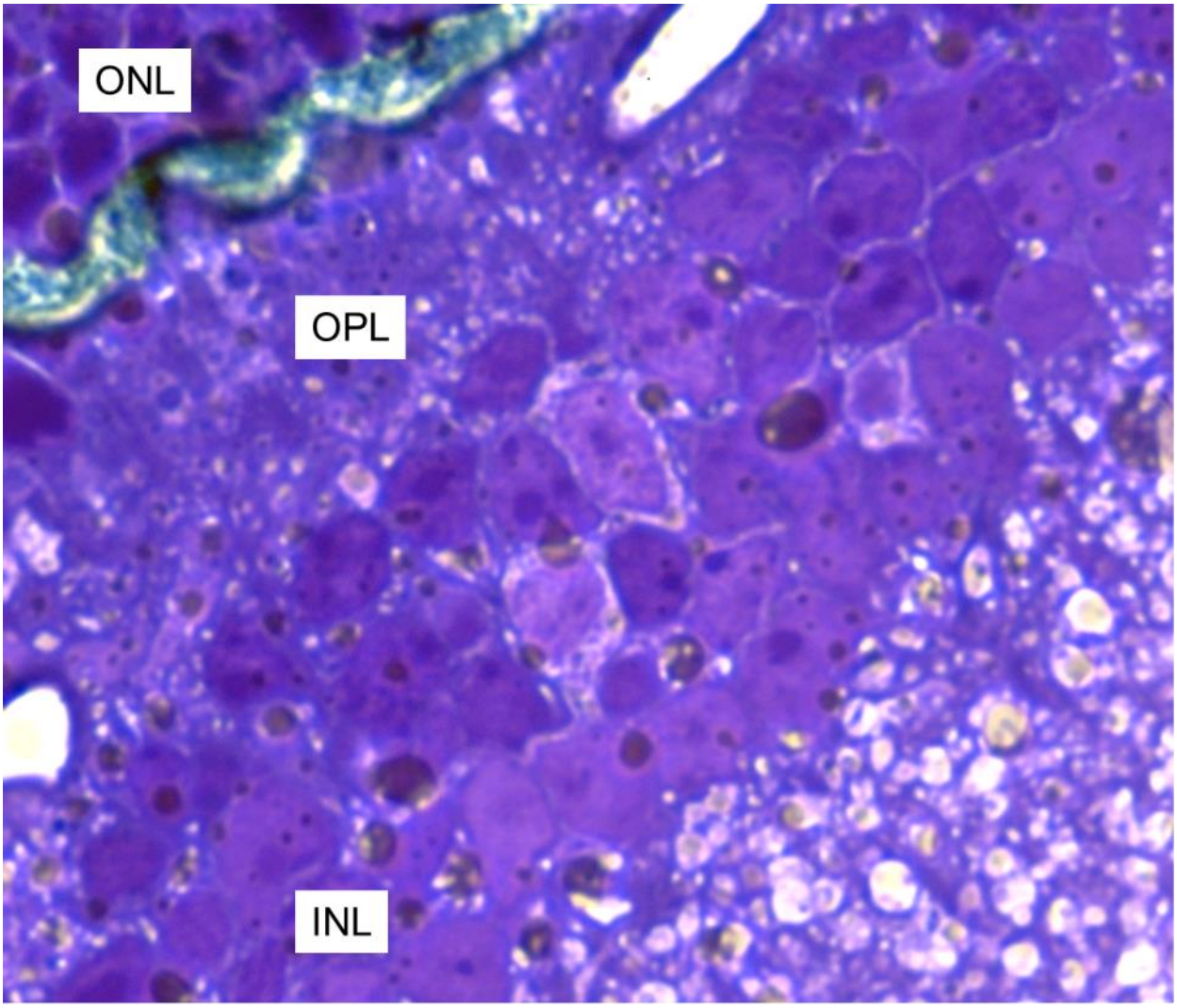


21 days ONL

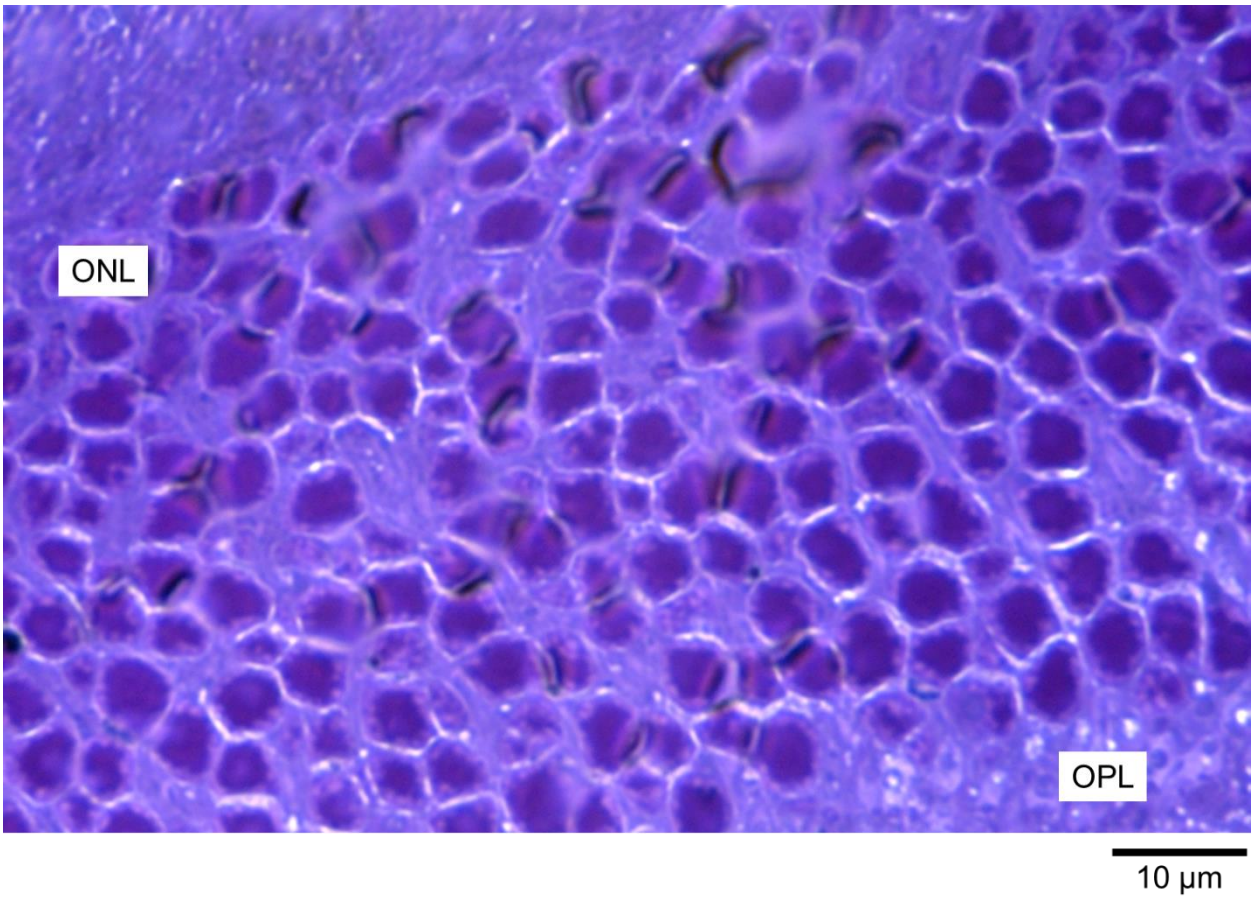


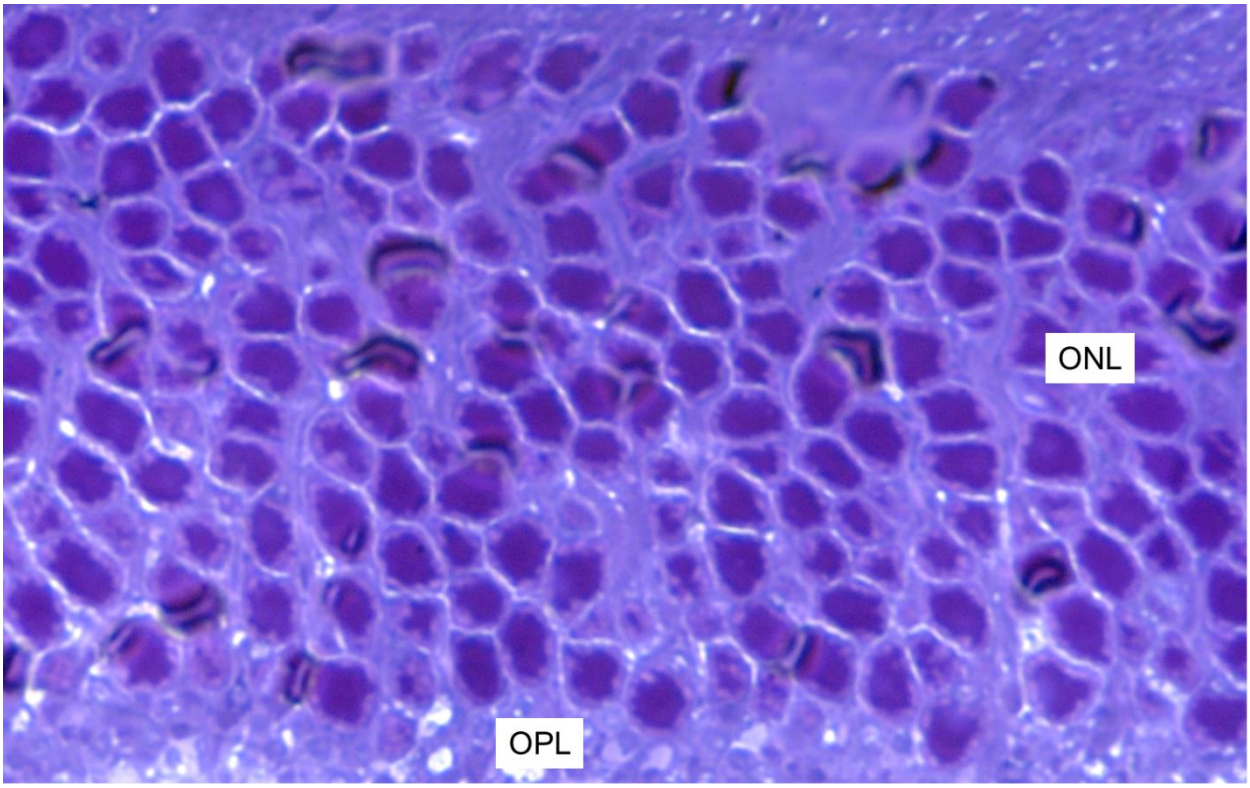
21 days INL



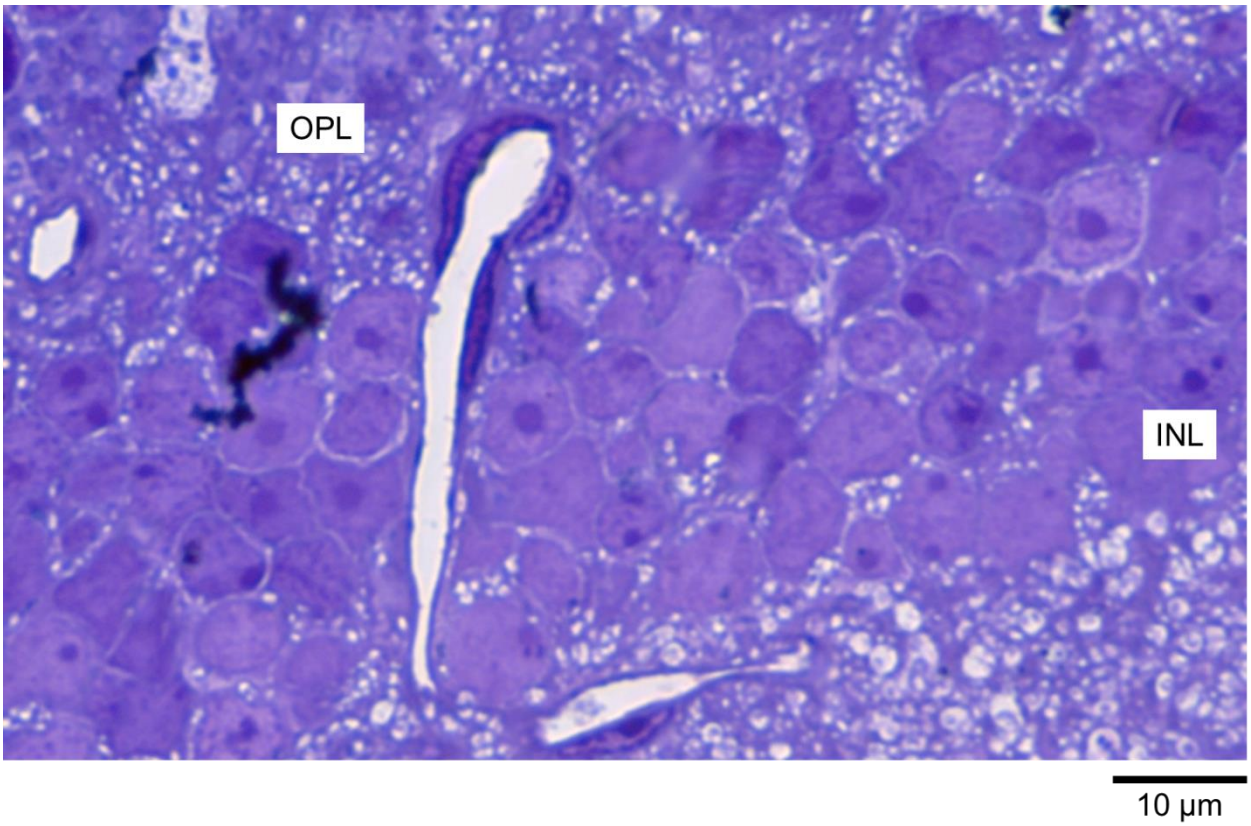

ONL
OPL
INL
10 µm

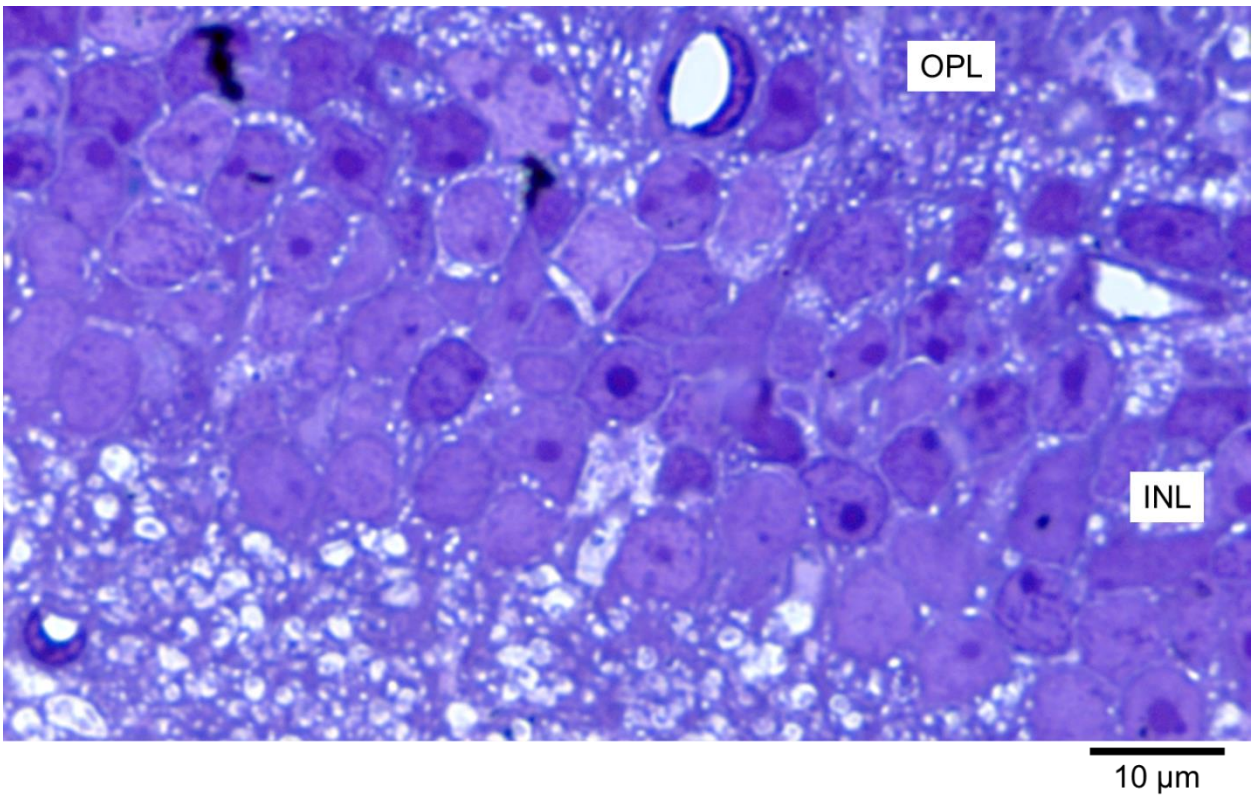
60 days ONL




ONL
OPL
10 µm

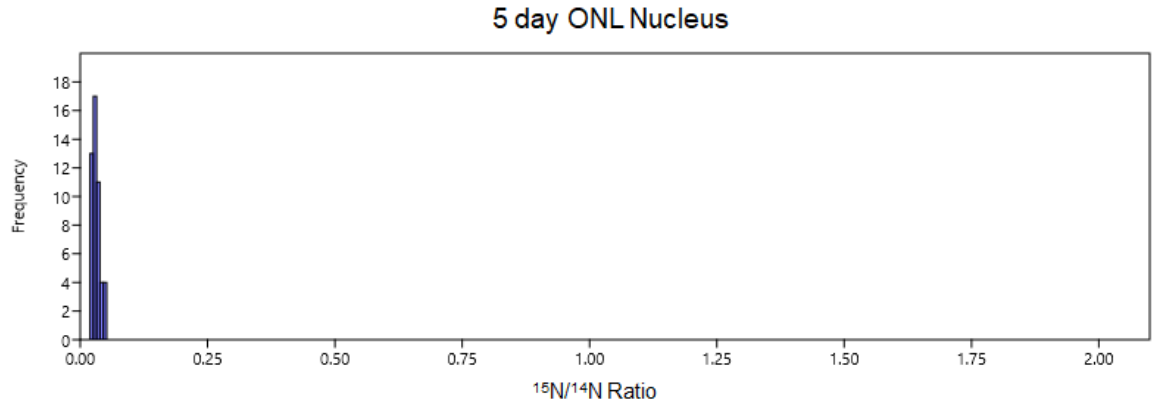
60 days INL

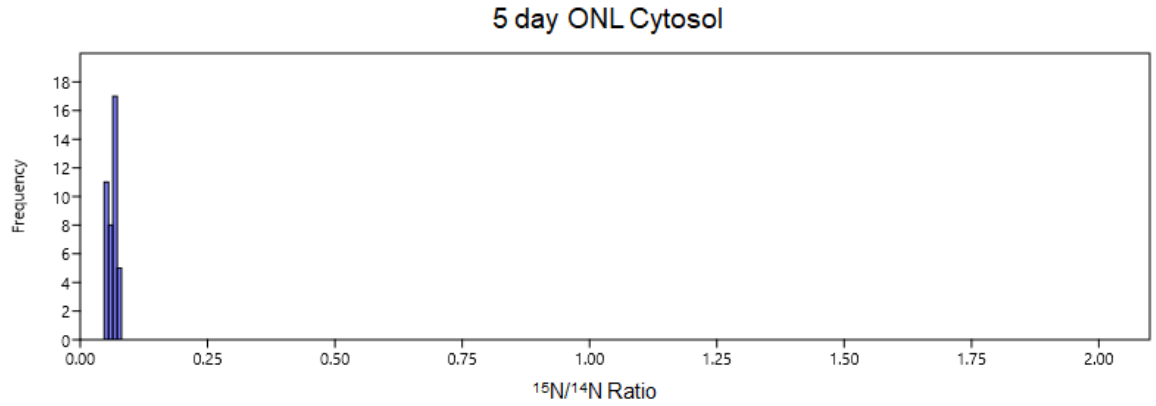


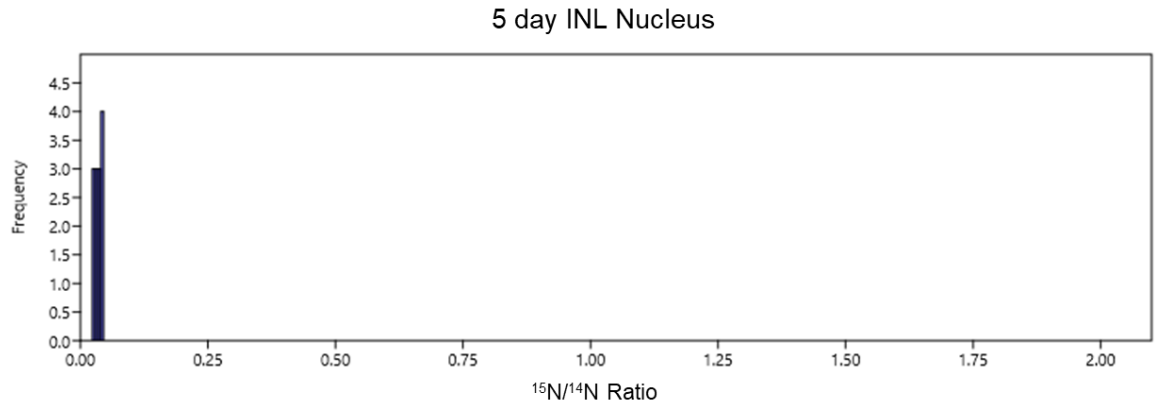


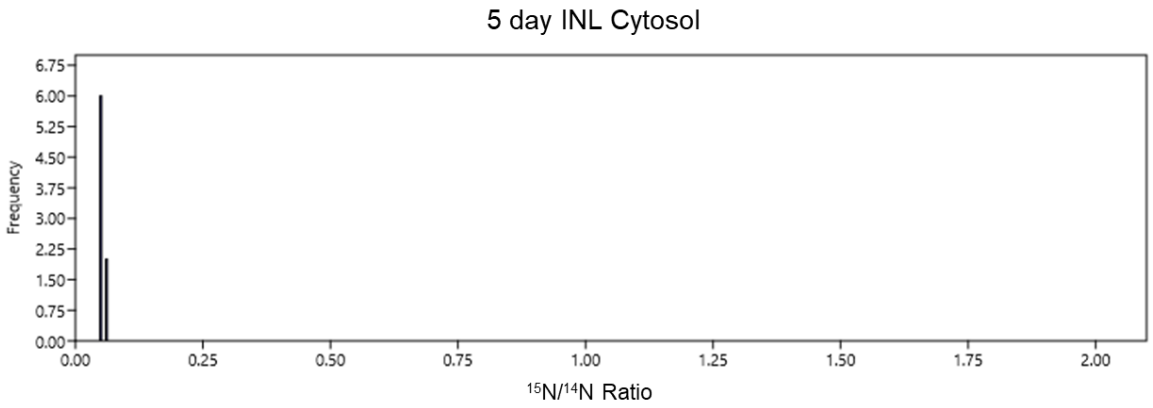
Histograms of Average N Ratios

5 days








5 day INL Cytosol
Frequency
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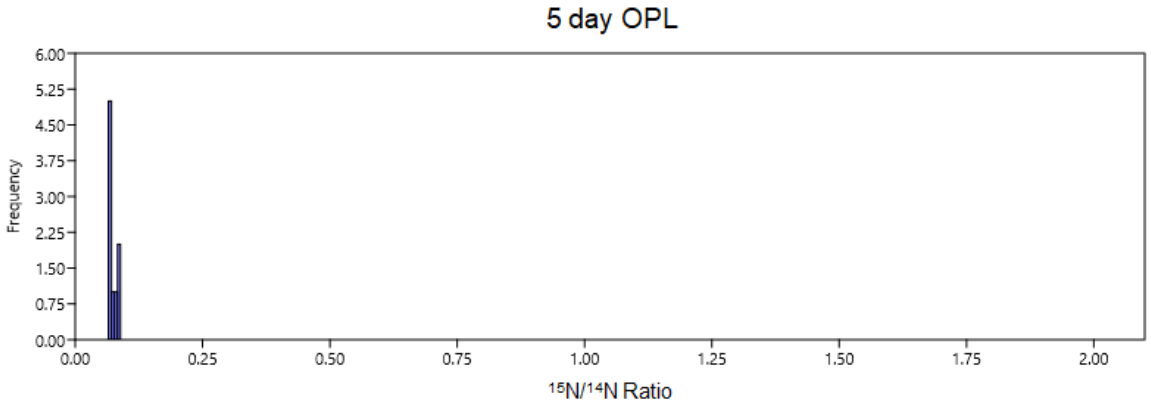
6.00
5.25
4.50
3.75
3.00
2.25
1.50
0.75
0.00
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
15N/14N Ratio


5 day OPL
Frequency
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5.25
4.50
3.75
3.00
2.25
1.50
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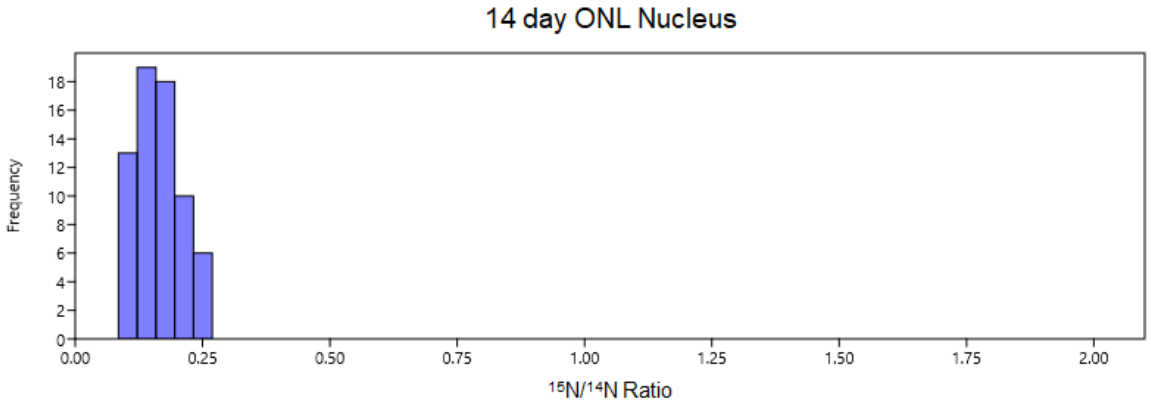
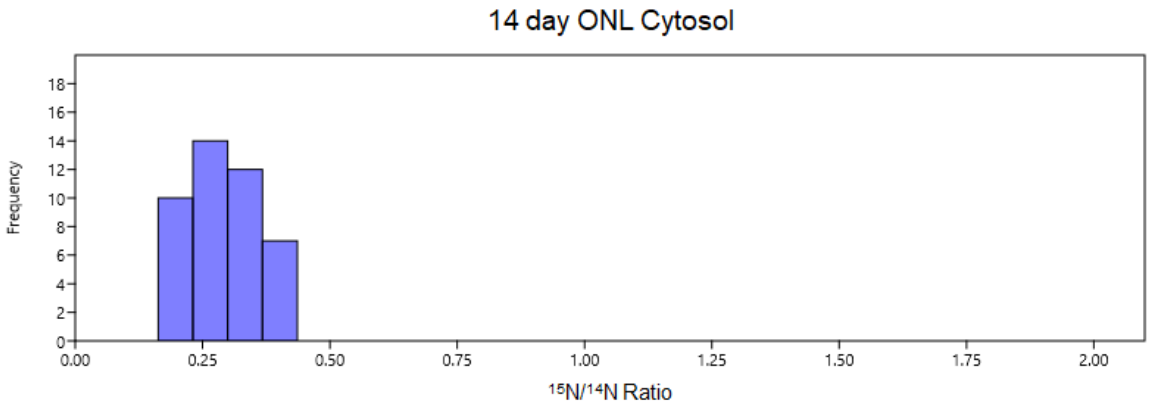
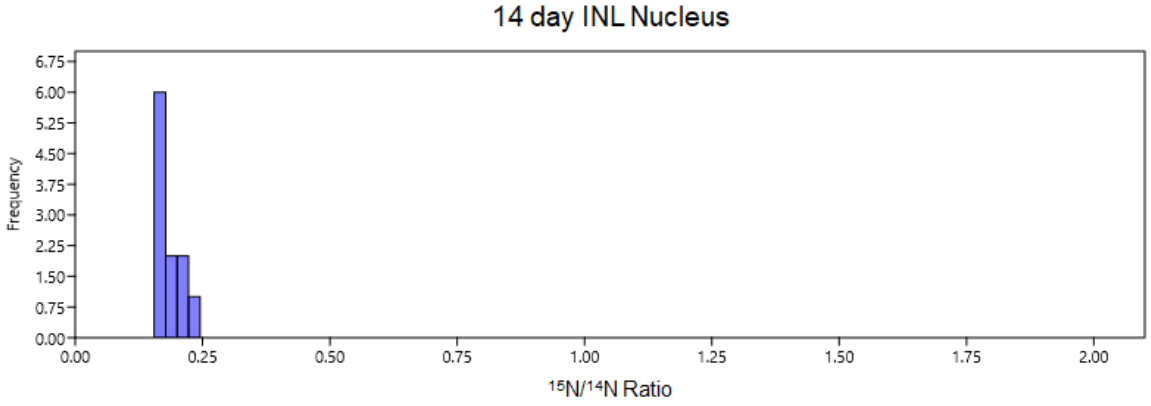
0.75
1.00
1.25
1.50
1.75
2.00
15N/14N Ratio

14 days


14 day ONL Nucleus
Frequency
18
16
14
12
10
8
6
4
2
0
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
15N/14N Ratio


14 day ONL Cytosol
Frequency
0
2
4
6
8
10
12
14
16
18
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
15N/14N Ratio


14 day INL Nucleus
Frequency
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0.75
1.50
2.25
3.00
3.75
4.50
5.25
6.00
6.75
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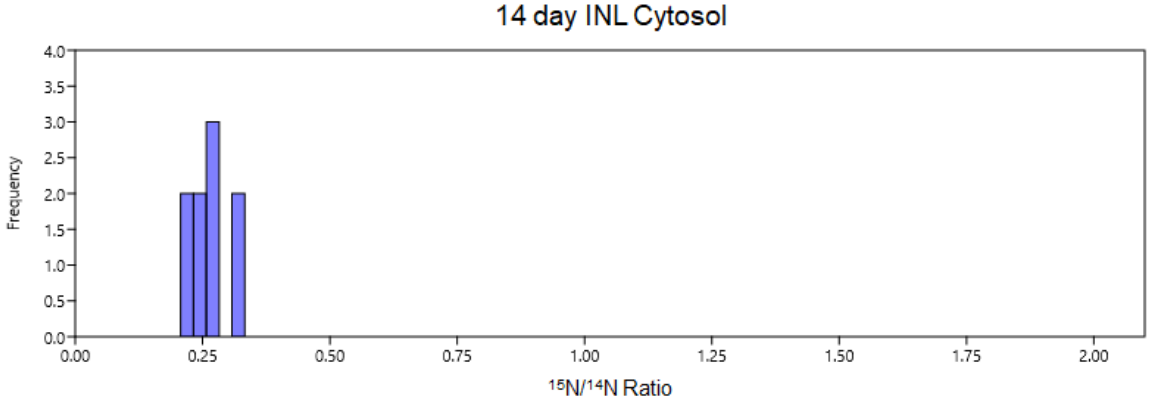
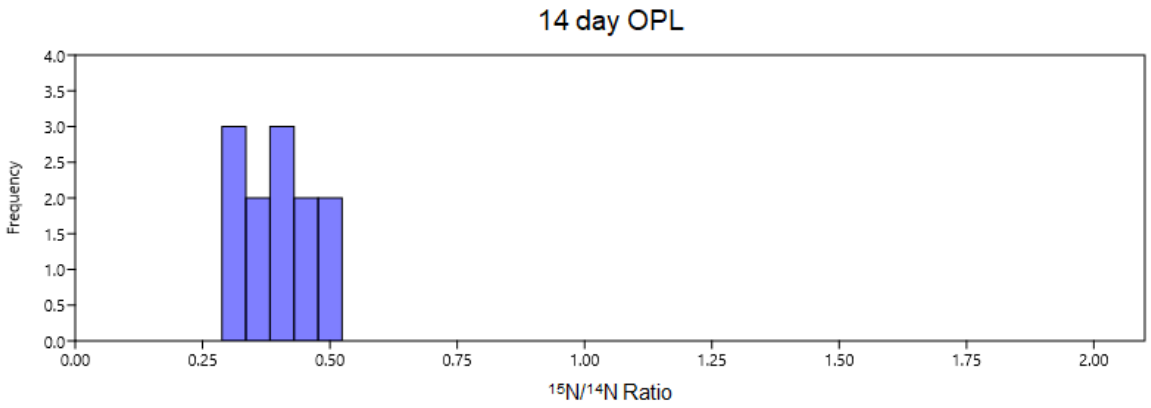
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
15N/14N Ratio


14 day INL Cytosol
Frequency
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
15N/14N Ratio


14 day OPL
Frequency
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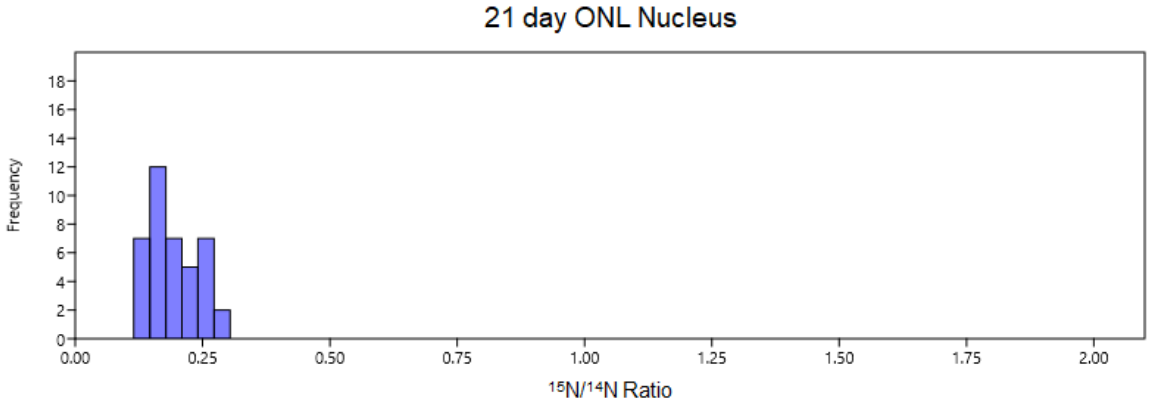
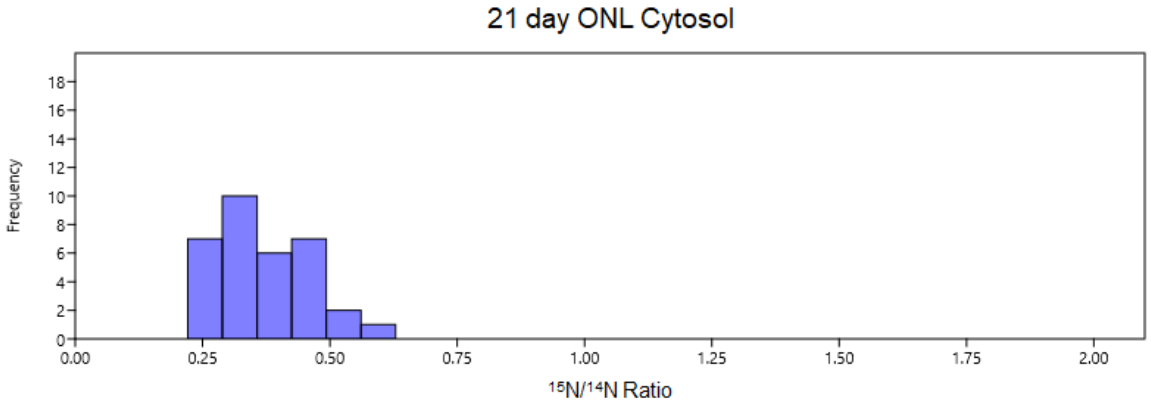
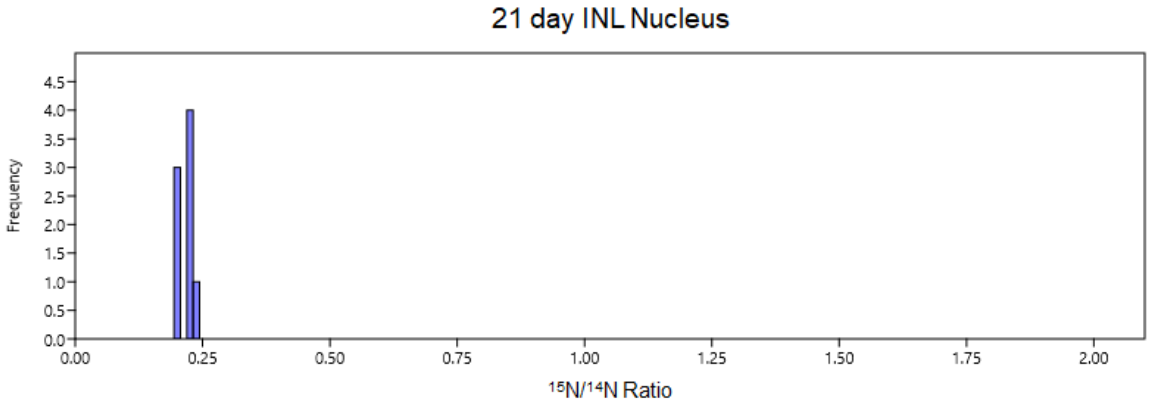
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
15N/14N Ratio

21 days


21 day ONL Nucleus
Frequency
0
2
4
6
8
10
12
14
16
18
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
15N/14N Ratio


21 day ONL Cytosol
Frequency
0
2
4
6
8
10
12
14
16
18
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
15N/14N Ratio


21 day INL Nucleus
Frequency
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1.5
2.0
2.5
3.0
3.5
4.0
4.5
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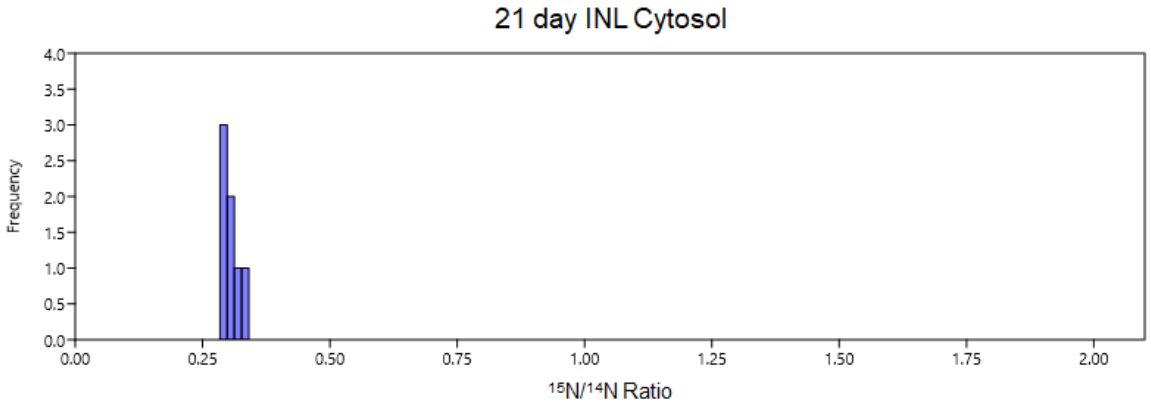
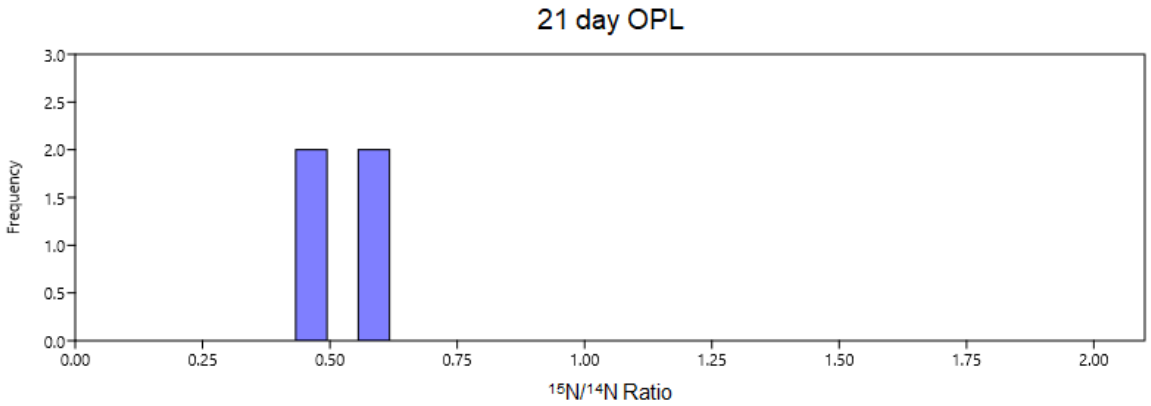
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
15N/14N Ratio


21 day INL Cytosol
Frequency
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
15N/14N Ratio


21 day OPL
Frequency
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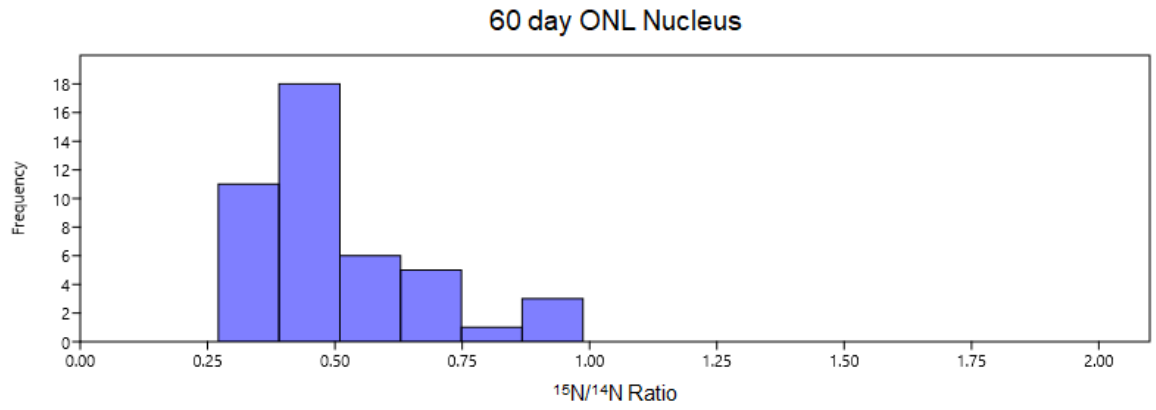
0.5
1.0
1.5
2.0
2.5
3.0
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
15N/14N Ratio

60 days


60 day ONL Nucleus
Frequency
0
2
4
6
8
10
12
14
16
18
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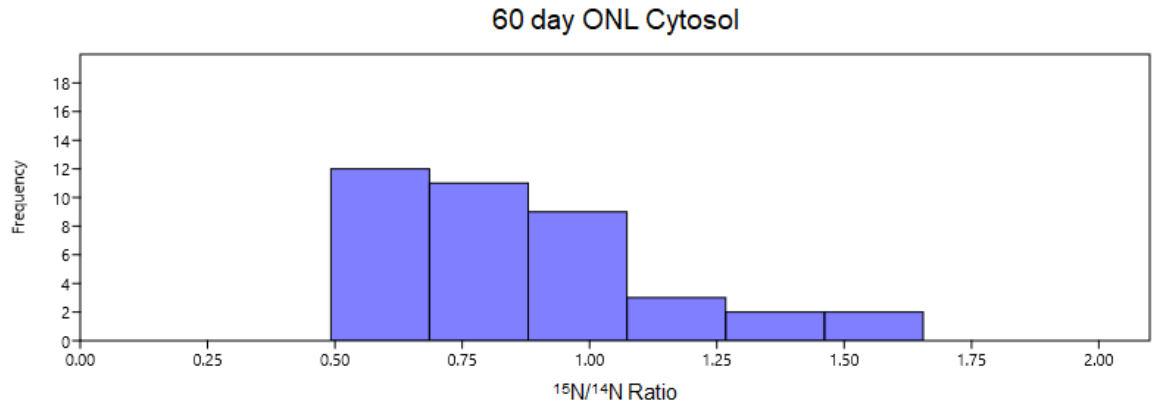
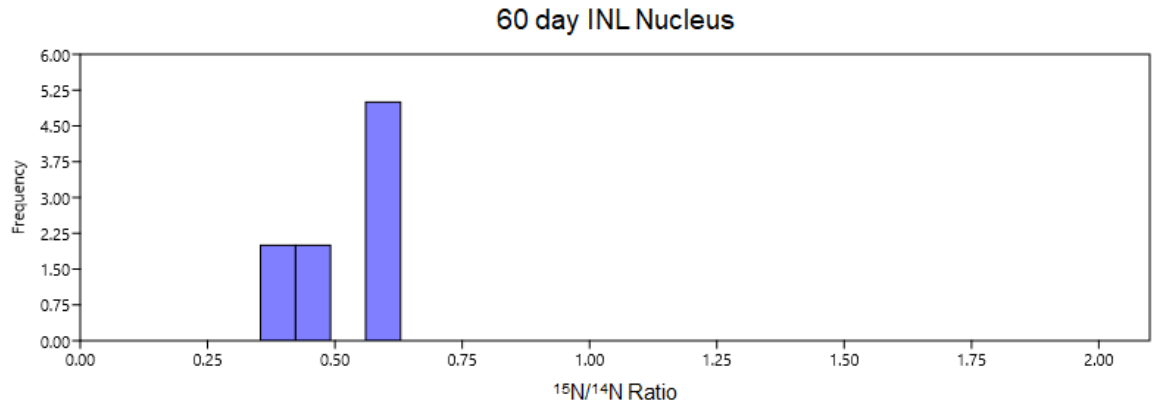
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
15N/14N Ratio


60 day ONL Cytosol
Frequency
0
2
4
6
8
10
12
14
16
18
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
15N/14N Ratio


60 day INL Nucleus
Frequency
0.00
0.75
1.50
2.25
3.00
3.75
4.50
5.25
6.00
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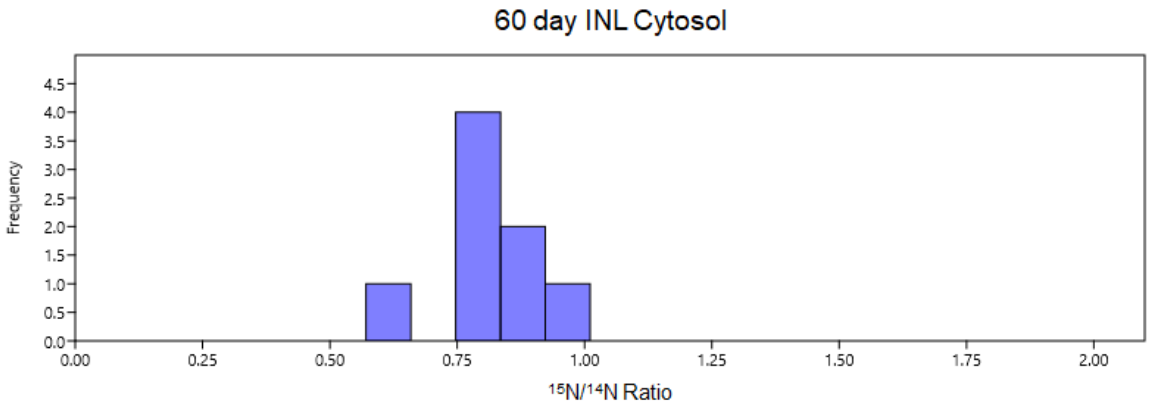
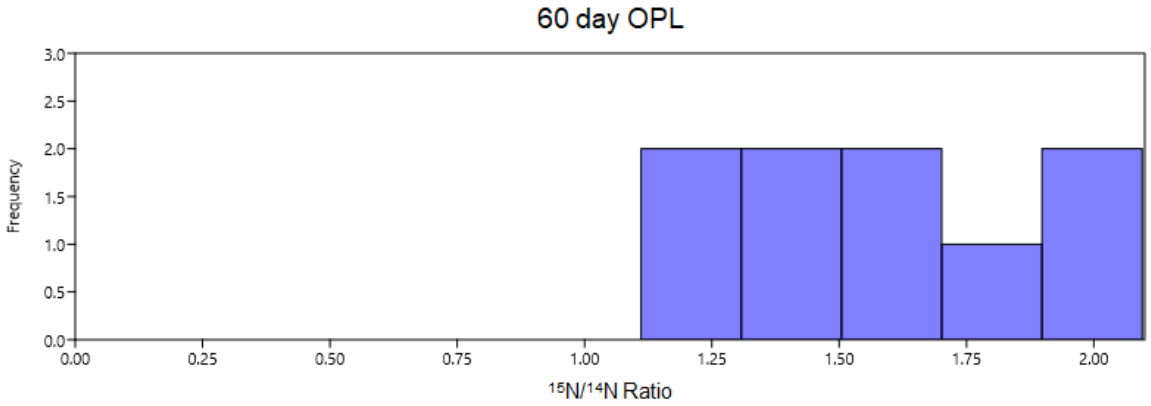
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
15N/14N Ratio


60 day INL Cytosol
Frequency
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
15N/14N Ratio


60 day OPL
Frequency
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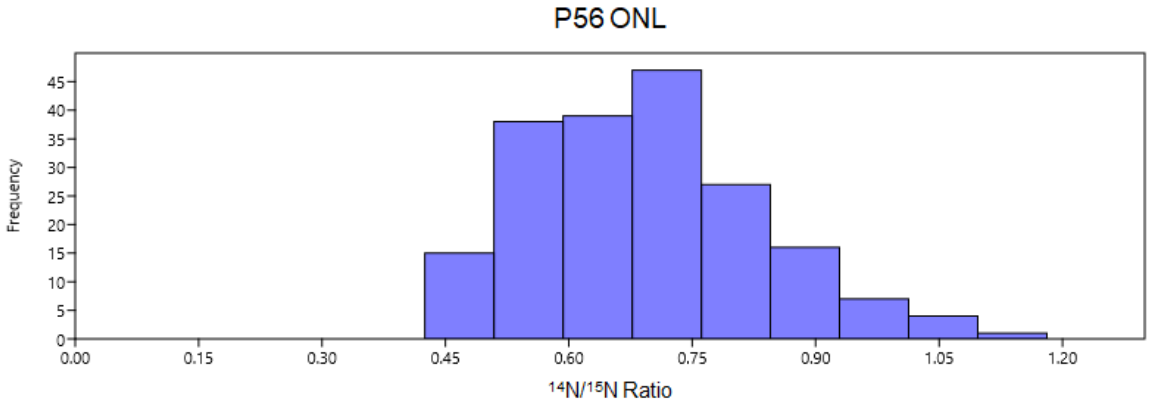
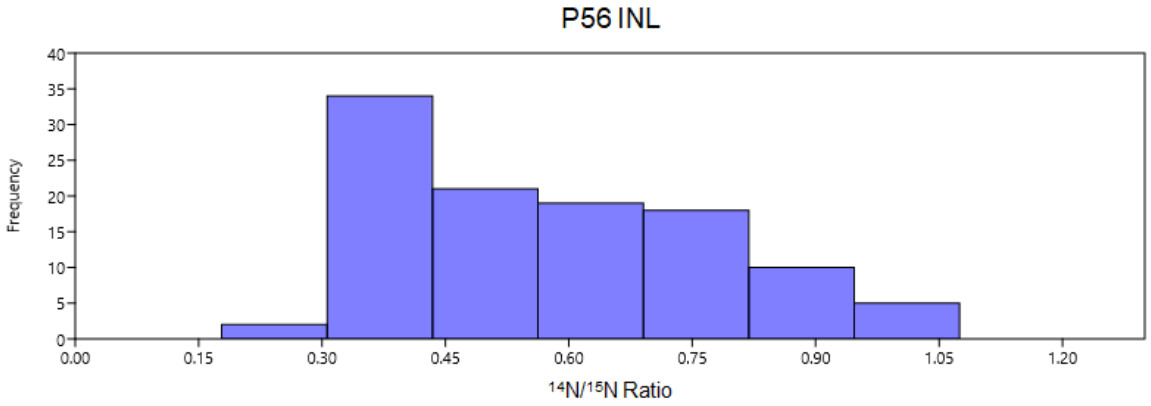
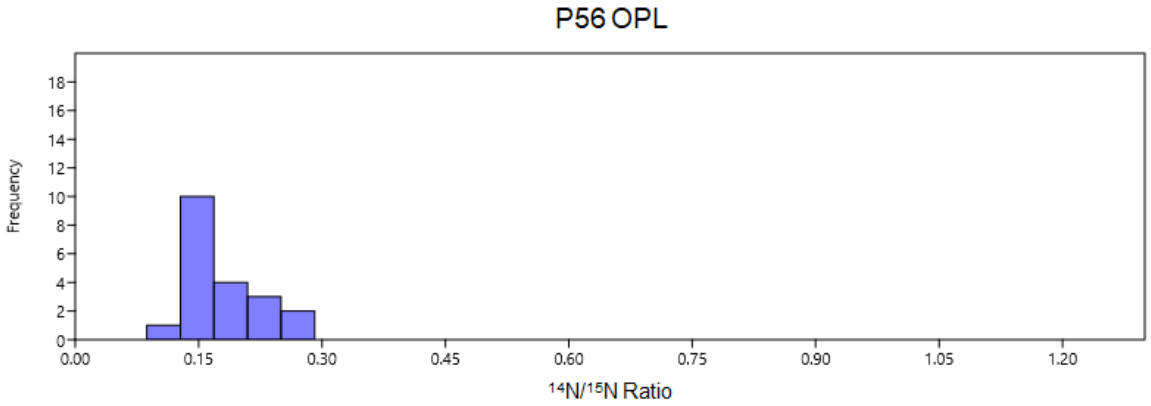
0.5
1.0
1.5
2.0
2.5
3.0
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
15N/14N Ratio

P56 Mice


P56 ONL
Frequency
0
5
10
15
20
25
30
35
40
45
0.00
0.15
0.30
0.45
0.60
0.75
0.90
1.05
1.20
14N/15N Ratio


P56 INL
Frequency
40
35
30
25
20
15
10
5
0
0.00
0.15
0.30
0.45
0.60
0.75
0.90
1.05
1.20
14N/15N Ratio


P56 OPL
Frequency
18
16
14
12
10
8
6
4
2
0
0.00
0.15
0.30
0.45
0.60
0.75
0.90
1.05
1.20
14N/15N Ratio