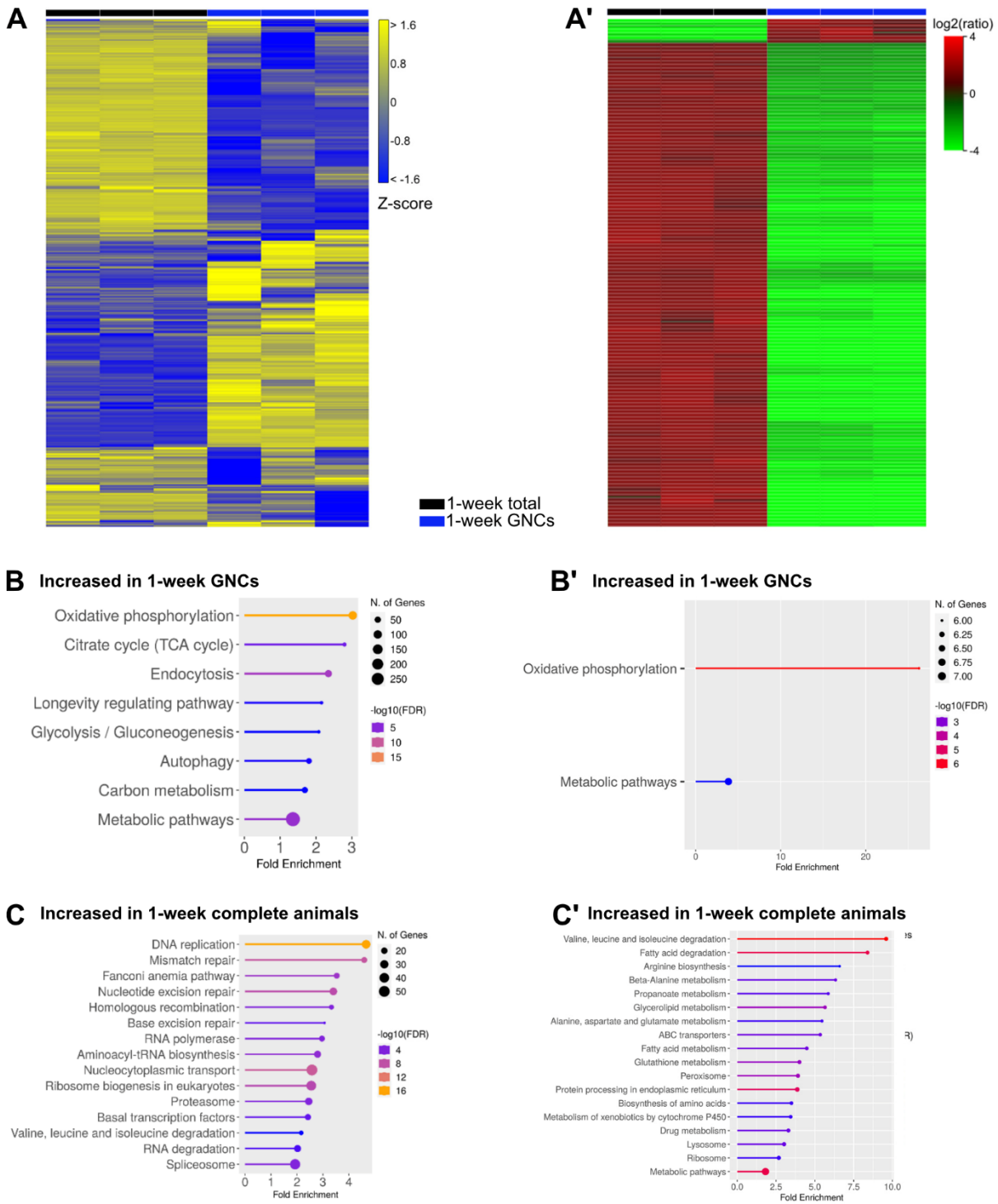


1 Supporting Information captions:

2 Supplementary Figures

3

4 Fig. S1



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6 **Figure S1: Core characteristics of garland nephrocytes at the protein and transcript level. (A)**  
7 Heatmap of RNAseq replicates (minimum fold change 1.5, FDR p-value cutoff 0.05) from 1-week-old

8 complete animals (black bar) and 1-week-old GNCs (blue bar). (A') Heatmap of proteome replicates  
9 isolated from 1-week-old complete animals (black bar) and 1-week-old GNCs (blue bar). (B) KEGG  
10 pathways (transcriptome-based) enriched in 1-week-old GNCs, relative to 1-week-old total animals.  
11 (B') KEGG pathways (proteome-based) enriched in 1-week-old GNCs, relative to 1-week-old total  
12 animals. (C) KEGG pathways (transcriptome-based) enriched in 1-week-old total animals, relative to 1-  
13 week-old GNCs. (C') KEGG pathways (proteome-based) enriched in 1-week-old total animals, relative  
14 to 1-week-old GNCs.

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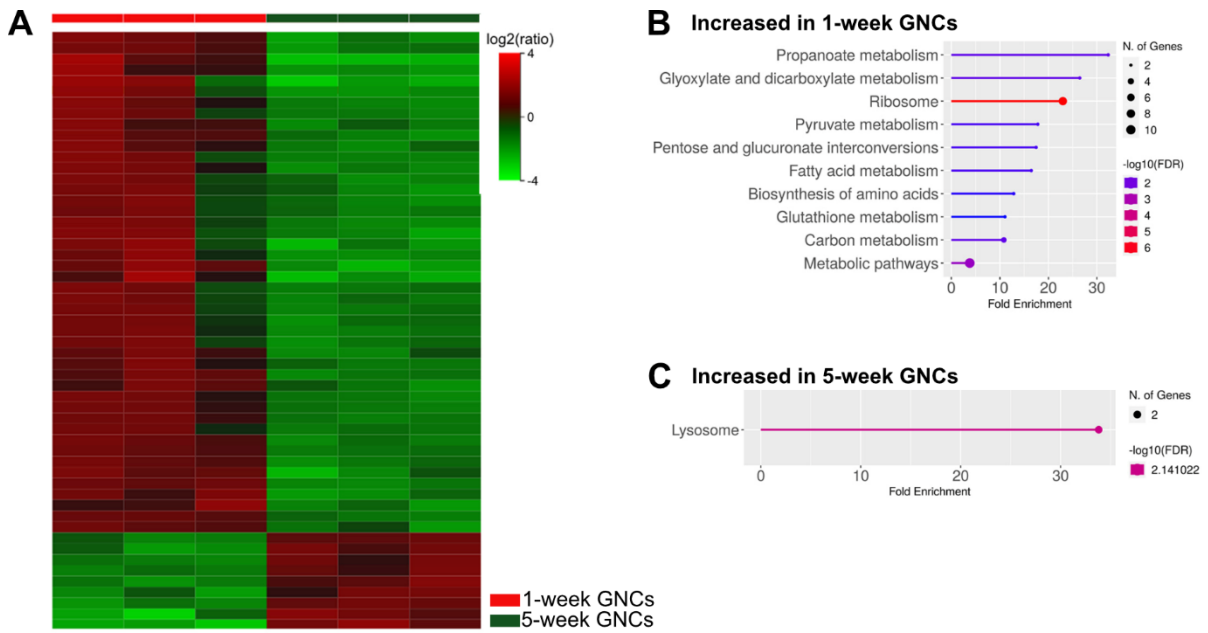
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38 **Fig. S2**



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40 **Figure S2: Proteomic signatures indicate similar cellular functions of 1-week-old and 5-week-**  
 41 **old garland nephrocytes.** (A) Heatmap of proteome replicates isolated from 1-week-old GNCs (red  
 42 bar) and 5-week-old GNCs (green bar). (B) KEGG pathways enriched in 1-week-old GNCs, relative to  
 43 5-week-old GNCs. (C) KEGG pathways enriched in 5-week-old GNCs, relative to 1-week-old GNCs.

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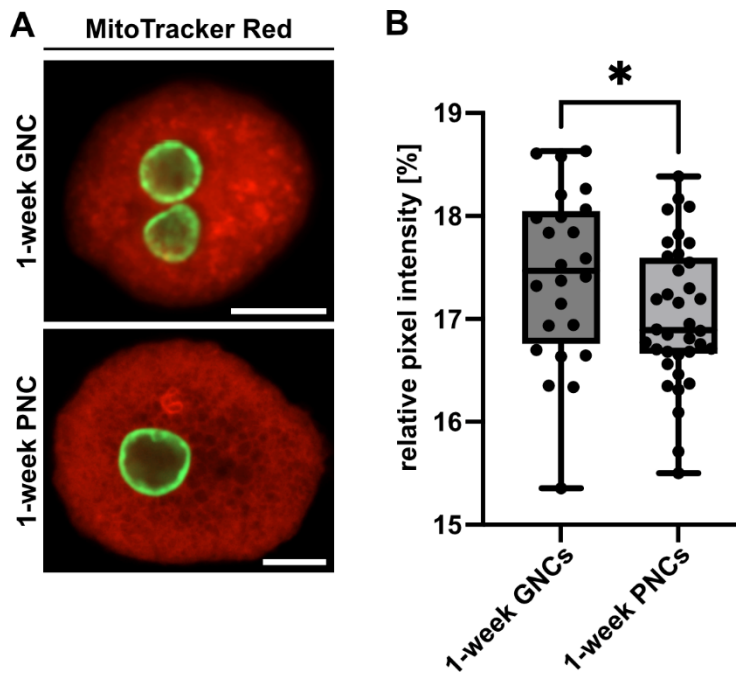
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63 Fig. S3



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65 **Figure S3: MitoTracker staining in nephrocytes.** (A) Representative images of garland nephrocytes  
66 (GNCs) and pericardial nephrocytes (PNCs) isolated from *handC*-GFP expressing animals (green) and  
67 stained with MitoTracker (red). Scale bars: 10  $\mu$ m. (B) Quantification of the respective pixel intensity  
68 values reveals a significantly increased abundance of mitochondria in GNCs relative to PNCs. For the  
69 boxplots, the centre line indicates the median, the upper and lower bounds indicate the 75<sup>th</sup> and 25<sup>th</sup>  
70 percentiles, respectively, and the whiskers indicate the minimum and maximum. For each analysis, a  
71 minimum of 20 individual cells was measured. Asterisks indicate statistically significant differences  
72 between the two cell types (\* $p < 0.05$ , two-tailed, unpaired t-test).

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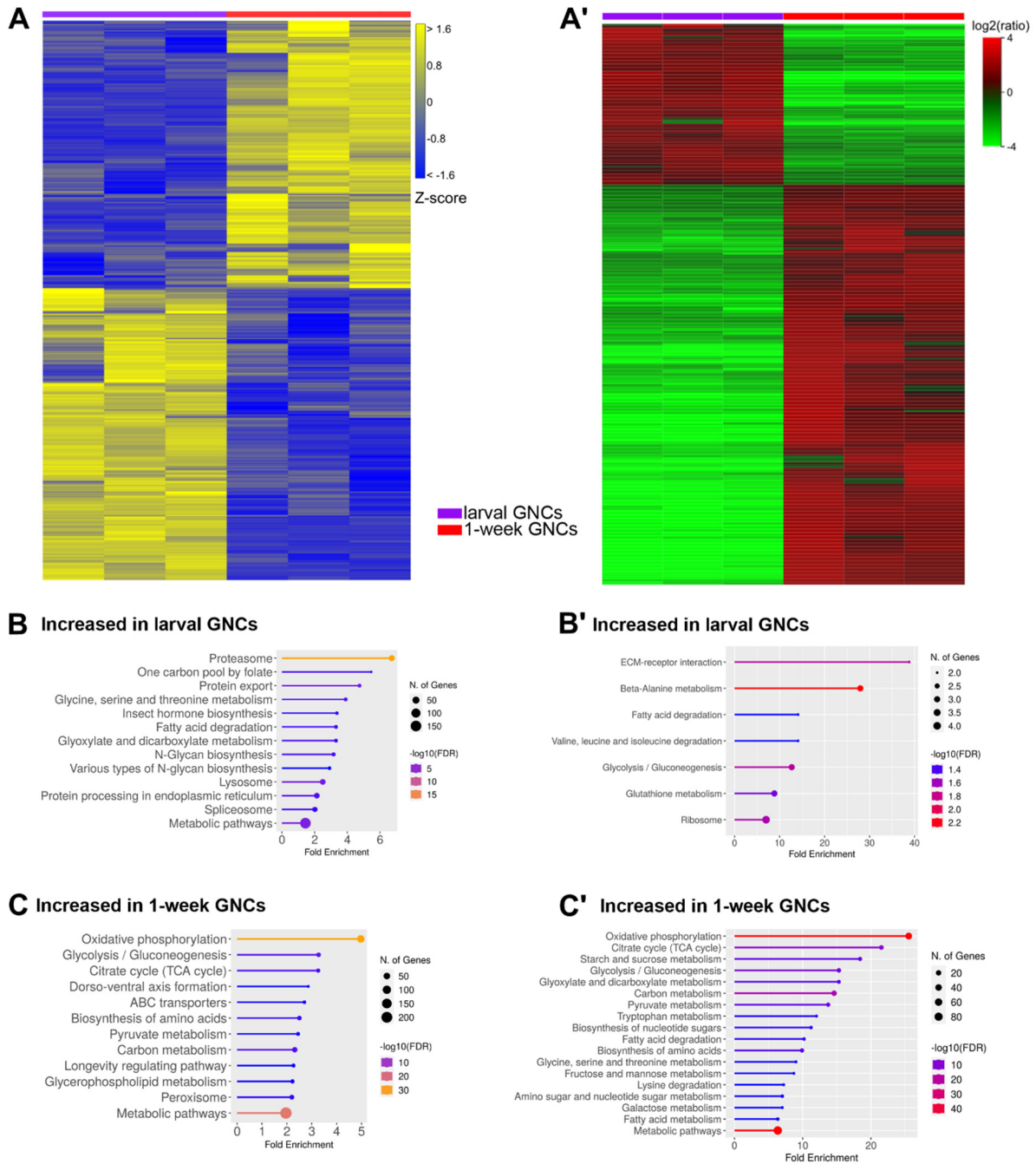
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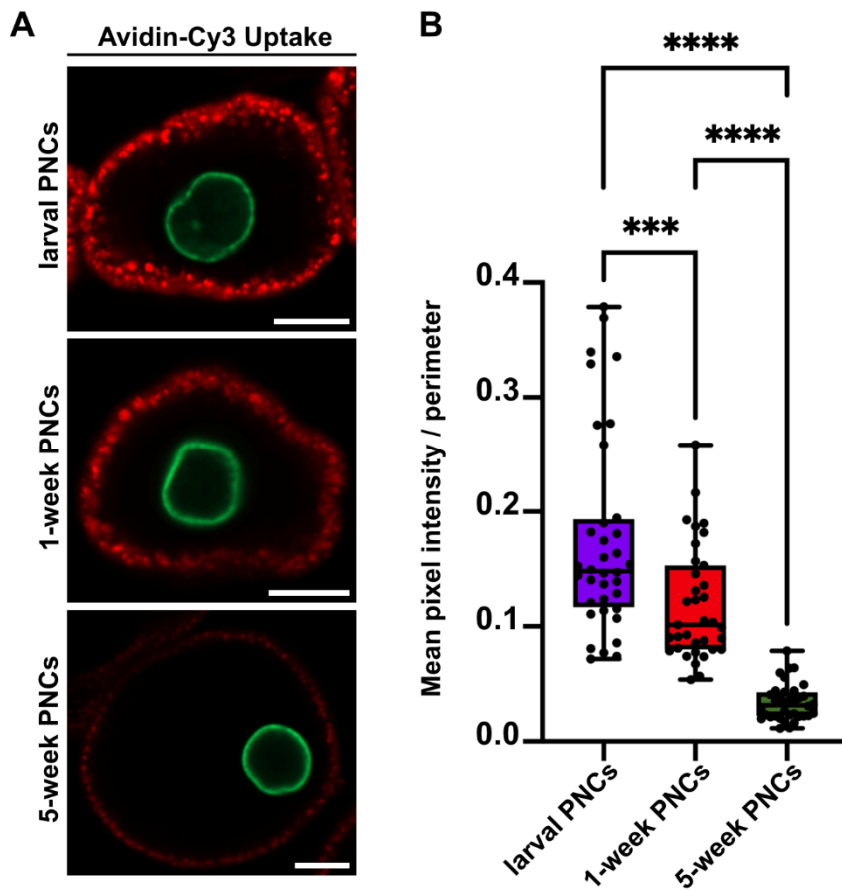


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93 **Figure S4: Garland nephrocytes exhibit developmental stage-specific transcriptomic and**  
 94 **proteomic signatures.** (A) Heatmap of RNAseq replicates (minimum fold change 1.5, FDR p-value  
 95 cutoff 0.05) from 3<sup>rd</sup> instar larval GNCs (purple bar) and 1-week-old adult GNCs (red bar). (A') Heatmap  
 96 of proteome replicates from 3<sup>rd</sup> instar larval GNCs (purple bar) and 1-week-old adult GNCs (red bar).  
 97 (B) KEGG pathways (transcriptome-based) enriched in 3<sup>rd</sup> instar larval GNCs, relative to 1-week-old  
 98 adult GNCs. (B') KEGG pathways (proteome-based) enriched in 3<sup>rd</sup> instar larval GNCs, relative to 1-  
 99 week-old adult GNCs. (C) KEGG pathways (transcriptome-based) enriched in 1-week-old adult GNCs,  
 100 relative to 3<sup>rd</sup> instar larval GNCs. (C') KEGG pathways (proteome-based) enriched in 1-week-old adult  
 101 GNCs, relative to 3<sup>rd</sup> instar larval GNCs.

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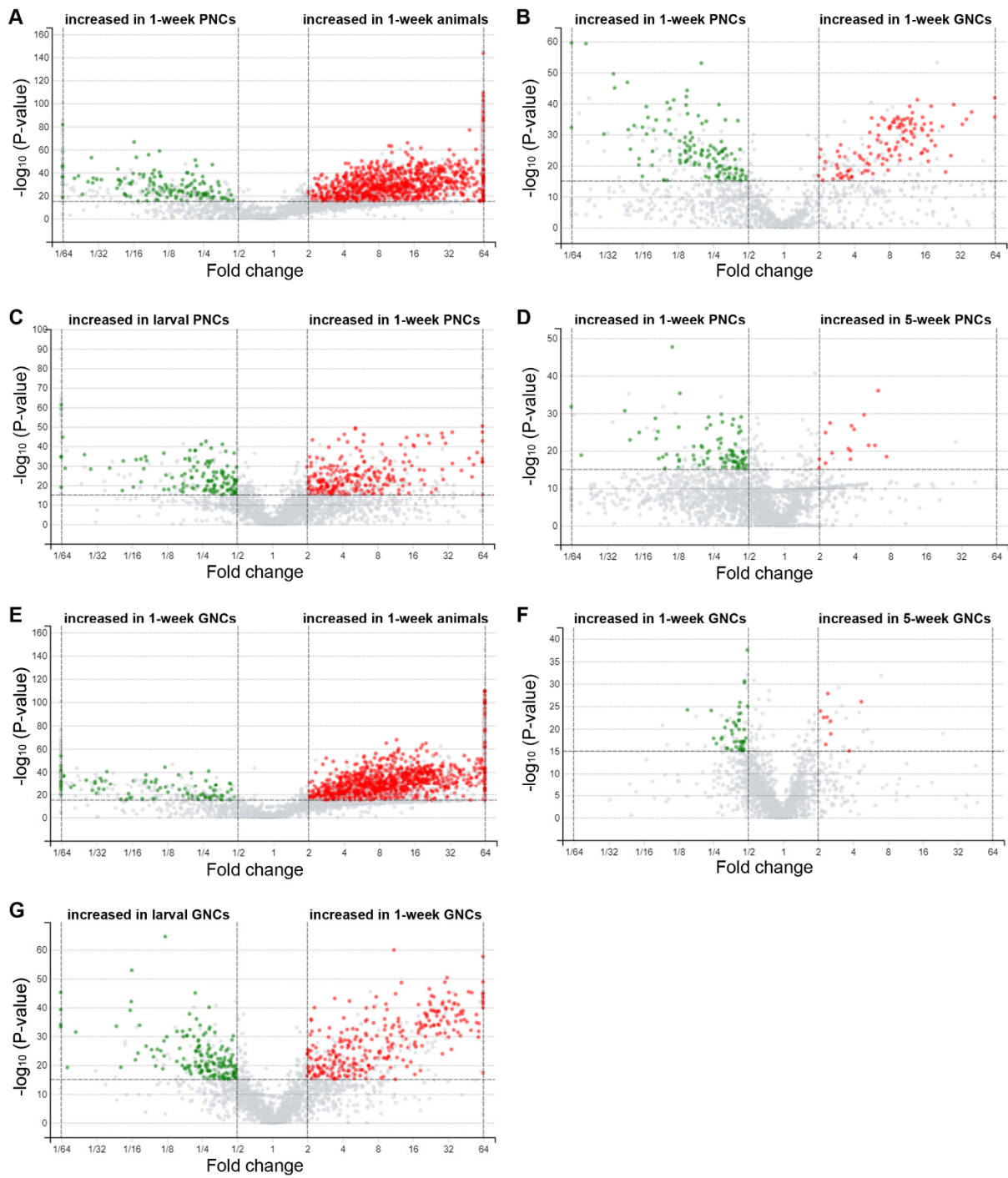
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107 **Figure S5: Endocytic activity in nephrocytes decreases with age.** (A) Representative images of  
 108 pericardial nephrocytes (PNCs) of different developmental stages and ages isolated from *handC*-GFP  
 109 expressing animals (green) and incubated with Cy3-labelled avidin (red). Scale bars: 10  $\mu$ m. (B)  
 110 Endocytic uptake efficiency was determined by pixel intensity measurements. Signal intensities were  
 111 normalised to the individual cell perimeters. For all boxplots, the centre line indicates the median, the  
 112 upper and lower bounds indicate the 75<sup>th</sup> and 25<sup>th</sup> percentiles, respectively, and the whiskers indicate  
 113 the minimum and maximum. For each analysis, a minimum of 30 individual cells was measured.  
 114 Asterisks indicate statistically significant differences between the two cell types (\*\* $p < 0.0005$ , \*\*\*\* $p <$   
 115  $0.0001$ , one-way ANOVA).

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129 **Figure S6: Volcano plots for all proteome comparisons performed in this study.** (A) 1-week PNCs  
 130 vs 1-week total animals; (B) 1-week PNCs vs 1-week GNCs; (C) 3<sup>rd</sup> instar larval PNCs vs 1-week PNCs;  
 131 (D) 1-week PNCs vs 5-week PNCs; (E) 1-week GNCs vs 1-week total animals; (F) 1-week GNCs vs 5-  
 132 week GNCs; (G) 3<sup>rd</sup> instar larval GNCs vs 1-week GNCs.