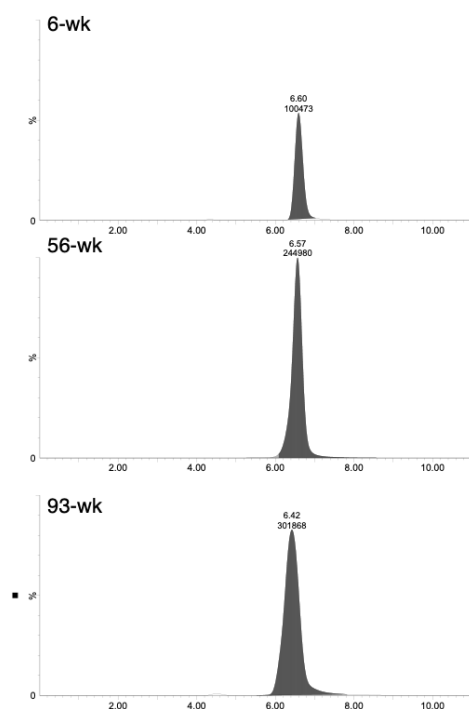
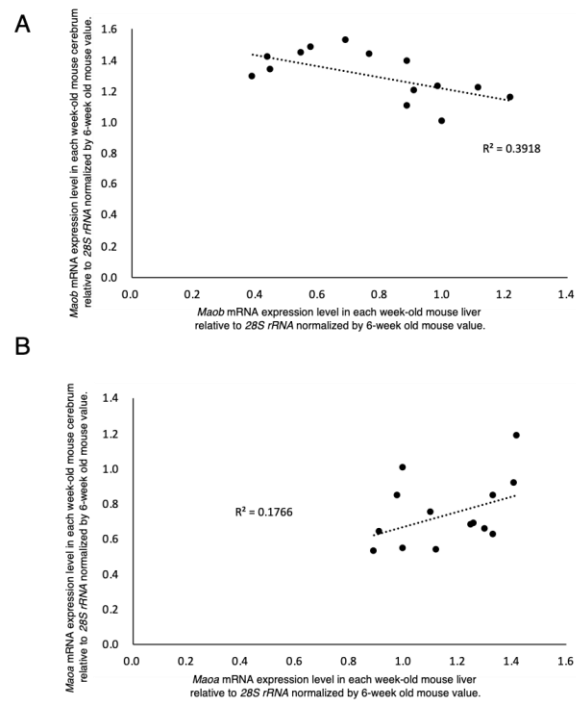


## Supplementary Material: Age-Dependent Decrease in Hepatic Geranylgeranoic Acid Content in C3H/HeN Mice and its Oral Supplementation Pre-vents Spontaneous Hepatoma

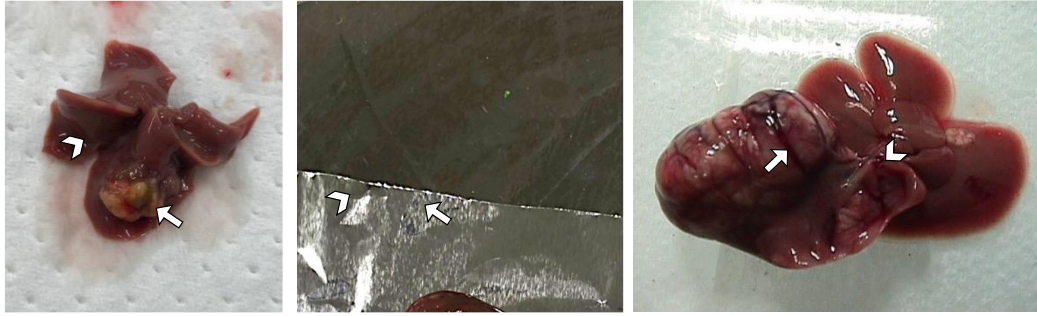
Yuki Tabata, Masahide Omori and Yoshihiro Shidoji



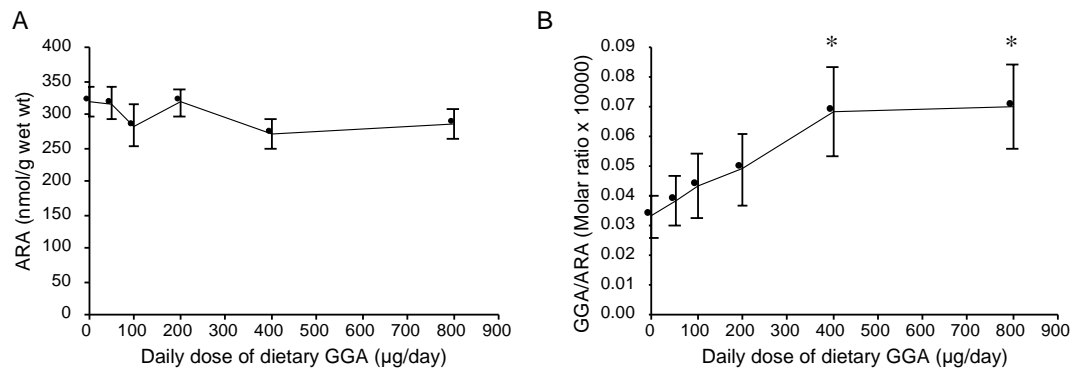
**Figure S1.** Representative LC/MS/MS chromatograms of the 6-, 56- and 93-week old mouse hepatic lipid extracts tracing arachidonic acid ( $m/z$ : 303-259). The chromatograms show a peak height of  $7.87 \times 10^5$  as 100%.



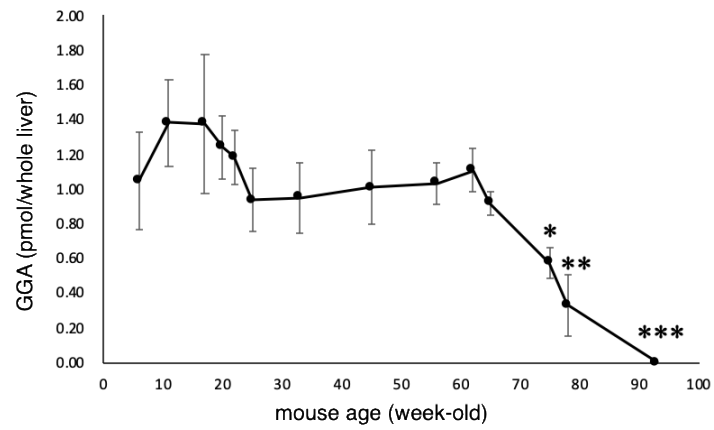
**Figure S2.** A: Association of hepatic *Maob* mRNA with cereberum *Maob* mRNA levels. B: Association of hepatic *Maa* mRNA with cerebrum *Maa* mRNA levels. Each point represent the average value of each age group ( $n = 5$ ). *Maa*, monoamine oxidase a; *Maob*, monoamine oxidase b.



**Figure S3.** Representative normal tissue (arrowhead) and tumor tissue (arrow) of male C3H/HeN mice used for measurement of endogenous GGA and *Maoa/Maob* mRNA levels.



**Figure S4.** Hepatic free ARA levels (A) and GGA/ARA molar ratio (B) in mice liver are plotted along with daily dose of orally administered GGA. The results are expressed as the mean  $\pm$  SD ( $n = 3$ ). \* $P < 0.05$  versus mice fed a control diet (ANOVA with post hoc Scheffe). ARA, arachidonic acid; GGA, geranylgeranoic acid;



**Figure S5.** Age-dependent changes of hepatic GGA content per C3H/HeN mouse. Endogenous GGA contents in the whole liver of each week-old male C3H/HeN mouse are plotted. All points represent the mean  $\pm$  SEM ( $n = 5$ ). \* $P < 0.05$ , \*\* $P < 0.01$  and \*\*\* $P < 0.001$  versus 6-week old mice (ANOVA with post hoc Scheffe). GGA, geranylgeranoic acid.

**Supplementary Table S1. The nucleotide sequences of each primer used for RT-qPCR.**

| Genes           | Primer | Sequence (5' – 3')    |
|-----------------|--------|-----------------------|
| <i>Maoa</i>     | F      | GGTCCTCCTTGGGGATAAAG  |
|                 | R      | TTCTCTCAGGTGGAAGCTCTG |
| <i>Maob</i>     | F      | GCACTGAAACAGCCTCACAC  |
|                 | R      | TCGTGCAGGGACATCCAAAG  |
| <i>28S rRNA</i> | F      | GCTCAGTACGAGAGGAACCG  |
|                 | R      | AGAGGCGTTCAGTCATAATC  |

F: forward primer, R: reverse primer

*Maoa*, monoamine oxidase a; *Maob*, monoamine oxidase b.

**Supplementary Table S2. The condition of thermal cyclers for RT-qPCR of *Maoa*, *Maob* and *28s rRNA*.**

|                 | Temperature, Duration | Slope    |
|-----------------|-----------------------|----------|
| Denature        | 95°C, 600 s           | 20°C / s |
| PCR (40 cycles) | 95°C, 15 s            | 20°C / s |
|                 | 65°C, 60 s            | 20°C / s |
| Melting         | 95°C, 0 s             | 20°C / s |
|                 | 57°C, 15 s            | 20°C / s |
|                 | 98°C, 0 s             | -        |
| Cooling         | 40°C, 30 s            | 20°C / s |

*Maoa*, monoamine oxidase a; *Maob*, monoamine oxidase b.