

SUPPLEMENTARY INFORMATION

Supplementary figure legends

Fig. S1

(A) Biosynthesis of n3 VLC-PUFA (C \geq 28) elongation products occurred in *Elov14*-transduced PC12 cells even without fatty acid treatment, but not in the controls (non-transduced and *Ad5-GFP* transduced cells). The major VLC-PUFA products were 32:5n3, 34:5n3 and 36:5n3.

(B) In the *Elov14*-transduced group treated with 22:6n3, the 22:6n3 was elongated to 32:6n3, 34:6n3 and 36:6n3. Also, 34:5n3 and 36:5n3 were present at much lower levels than the corresponding 34:6n3 and 36:6n3. The control cells did not show any VLC-PUFA products.

(C) Quantitative analysis of the 20:4n6 elongation products 28:4n6, 30:4n6, 32:4n6, 34:4n6, 36:4n6 and 38:4n6 in the ELOVL4 protein-expressing PC12 cells. The major products were 34:4n6 and 36:4n6. There were no n6 VLC-PUFA products with 5 double-bonds, which could be due to lack of *FADS2* activity. The control cells did not show any VLC-PUFA products.

(D) N3 VLC-PUFA were only present in ELOVL4-expressing cells. C34 and C36 PUFA were the major products derived from both 20:5n3 and 22:6n3. However, the relative mole percent of 5n3 products was more than those from 6n3.

Fig. S1A

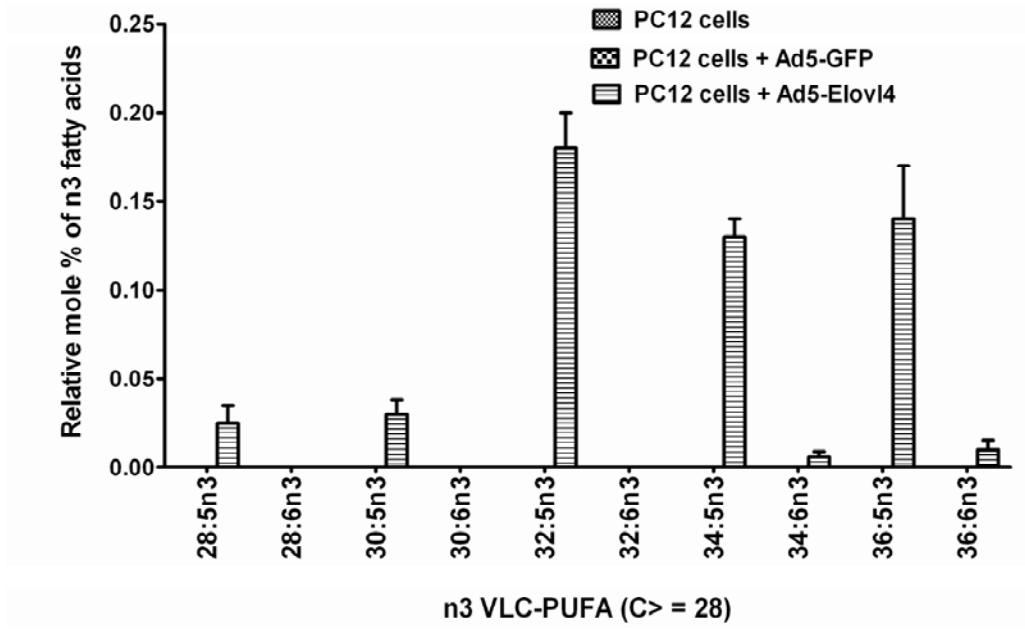


Fig. S1B

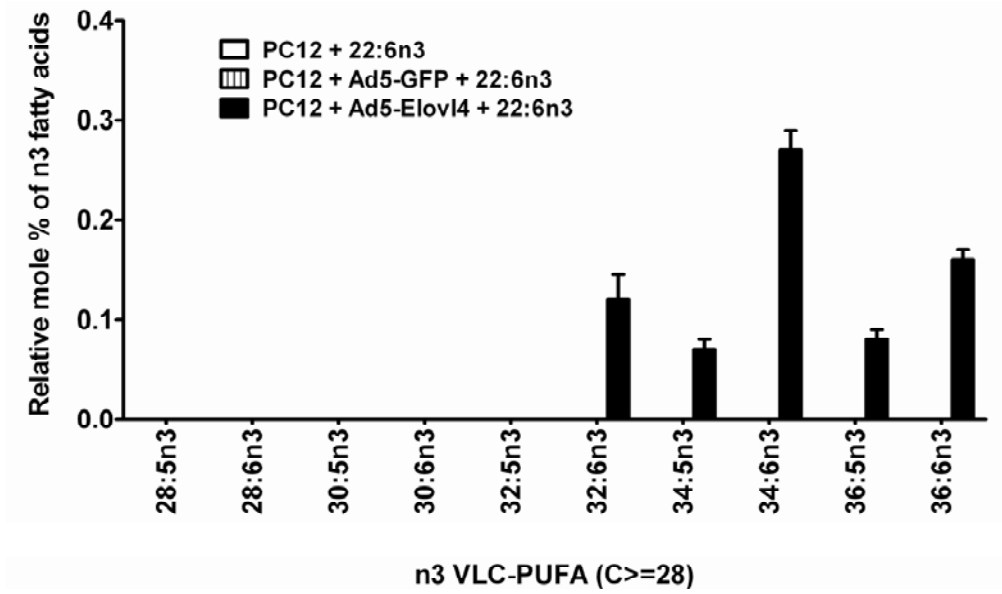


Fig. S1C

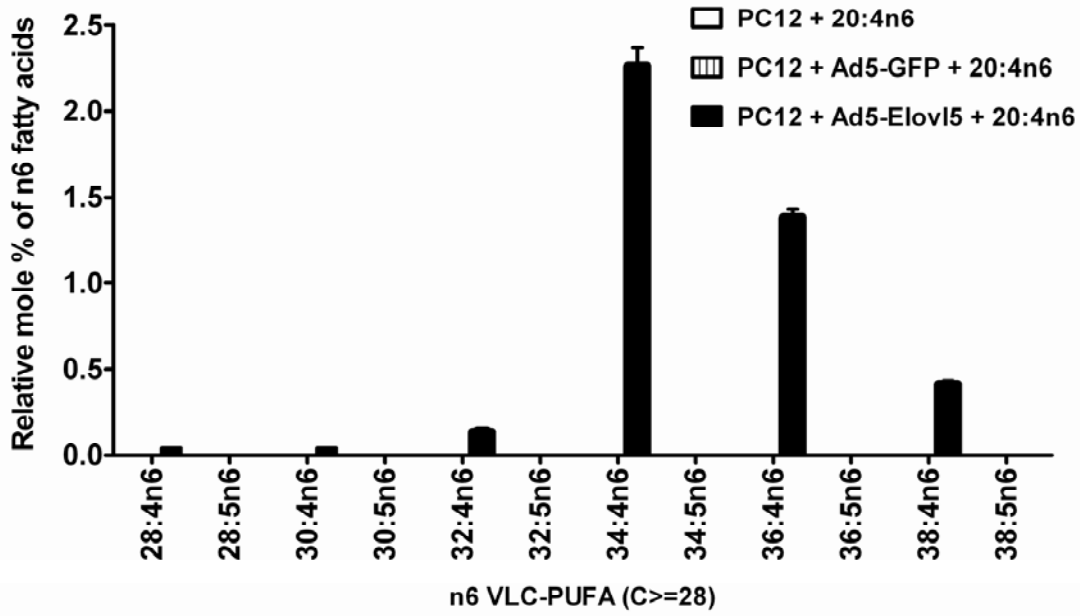


Fig. S1D

