

Supporting Information For:

Antioxidative properties and chemical changes of quercetin in fish oil: quercetin reacts with free fatty acids to form its ester derivatives

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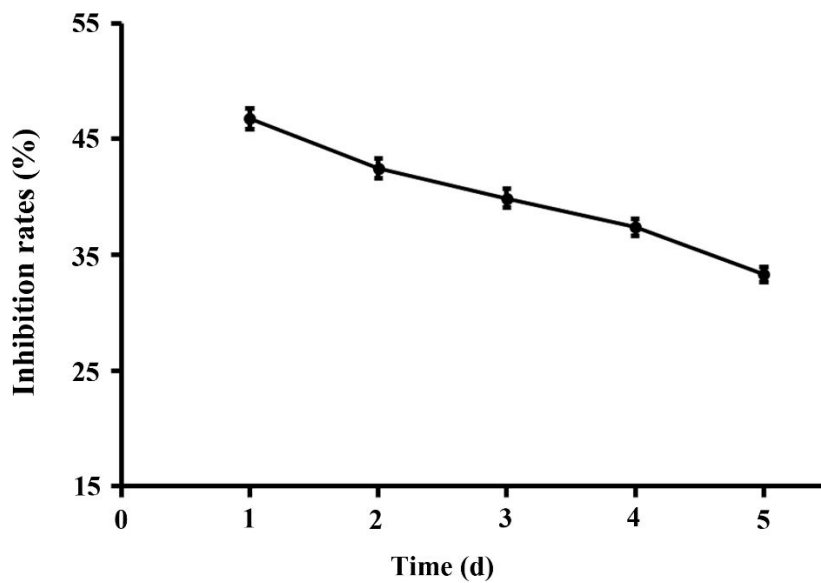


Figure S1 The Inhibition rate (%) of quercetin on the formation of total aldehydes in fish oil after heating at 60 °C for 1-5 days. $\text{Inhibition rate (\%)} = (C_{\text{control}} - C_{\text{quercetin}}) / C_{\text{control}} \times 100$, Where C_{control} is content of total aldehydes in the fish oil without quercetin, $C_{\text{quercetin}}$ is content of total aldehydes in the fish oil with quercetin. Values are mean \pm standard deviation, n = 3.

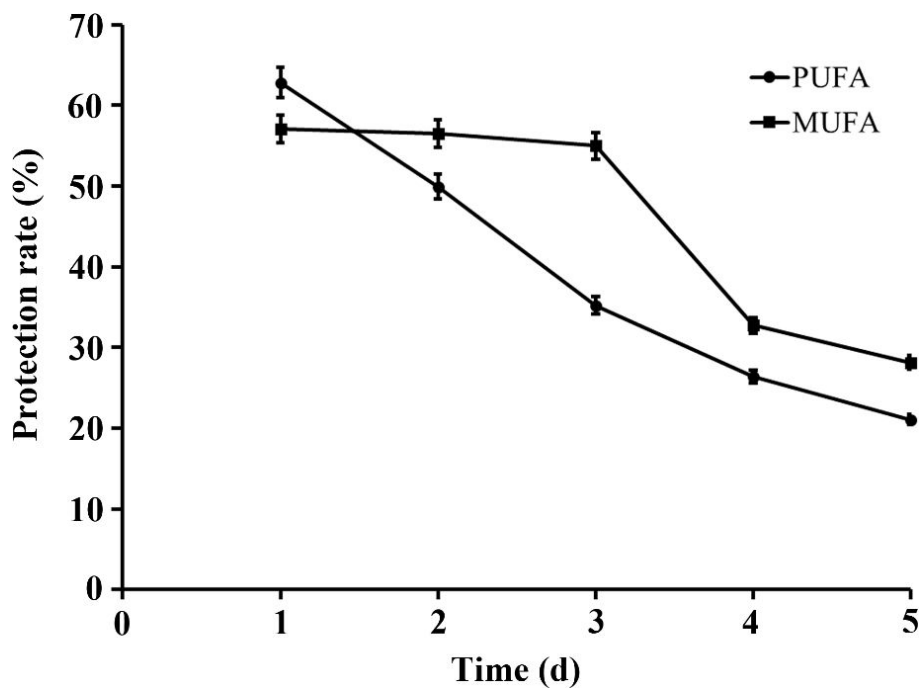


Figure S2 The protection rate (%) of quercetin on MUFA and PUFA in fish oil after heating at 60 °C for 1-5 days. $\text{Protection rate (\%)} = (C_{\text{quercetin}} - C_{\text{control}}) / (C_0 - C_{\text{control}}) \times 100$, Where C_{control} is content of PUFA and MUFA in the fish oil without quercetin, $C_{\text{quercetin}}$ is content of PUFA and MUFA in the fish oil with quercetin, C_0 is content of PUFA and MUFA on day 0. Values are mean \pm standard deviation, n = 3.

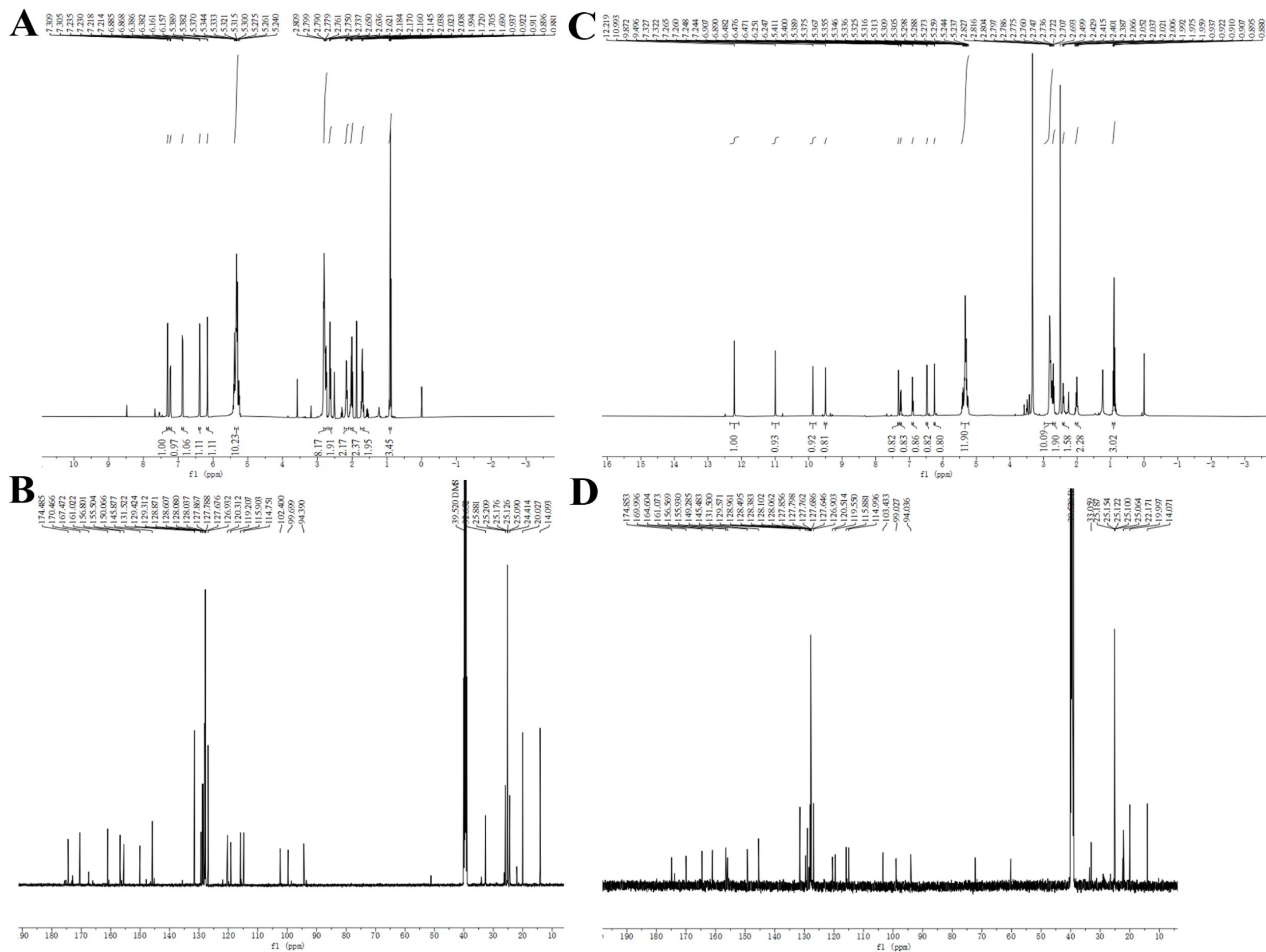


Figure S3 ^1H NMR spectrum of (A) quercetin-3-O-eicosapentaenoate and (C) quercetin-3-O-docosaehaenoate (in $\text{DMSO}-d_6$, 600 MHz). ^{13}C NMR spectrum of (B) quercetin-3-O-eicosapentaenoate and (D) quercetin-3-O-docosaehaenoate (in $\text{DMSO}-d_6$, 150 MHz).

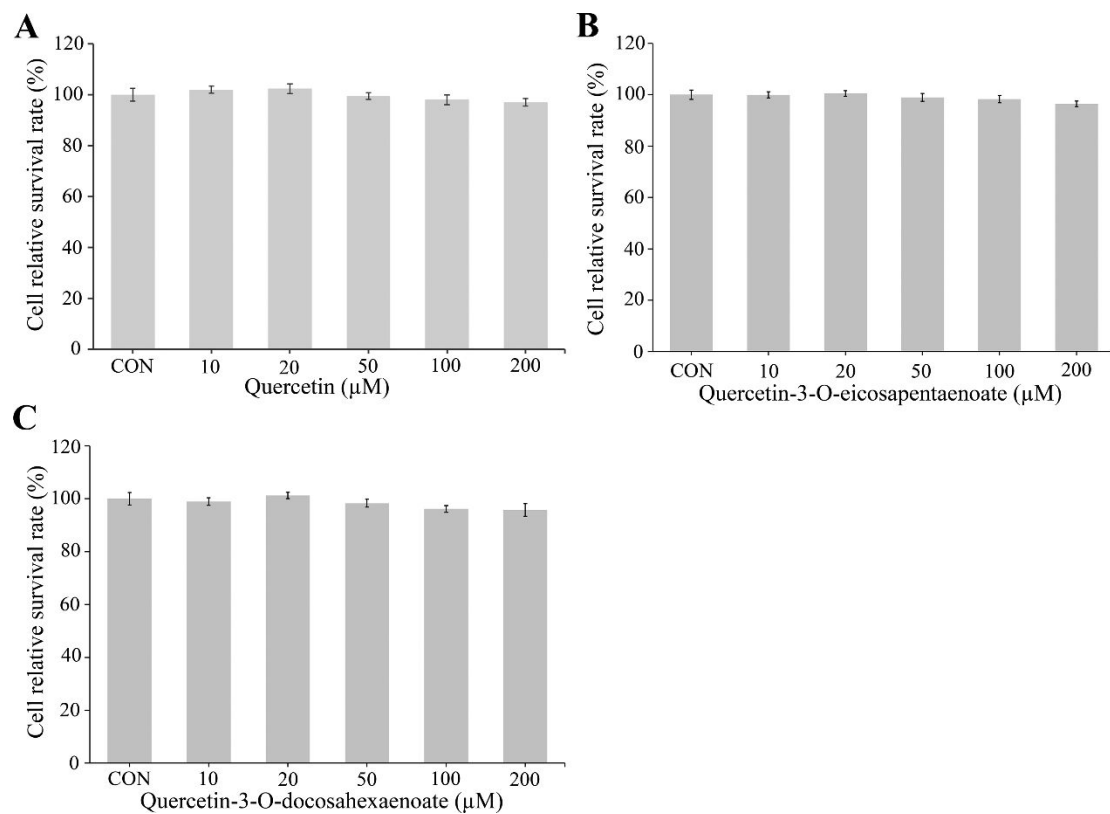


Figure S4 Viability of HepG2 cells treated with (A) quercetin, (B) quercetin-3-O-eicosapentaenoate, (C) quercetin-3-O-docosahexaenoate at different concentrations for 1 h at different concentrations for 1 h. Values are mean \pm standard deviation, $n = 3$.