

Determination of Glycidyl Esters and 3-MCPD Esters in Edible Oils by Sample Pretreatment with the Combination of Lipase Hydrolysis and Modified QuEChERS for GC-MS Analysis

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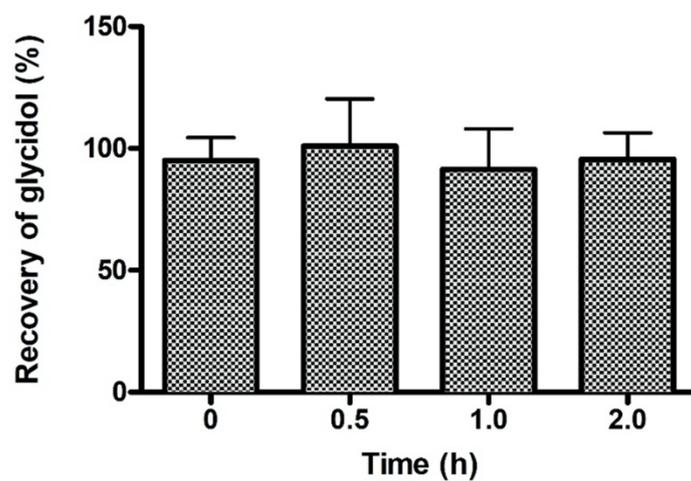


Figure S1. Chemical stability of glycidol in lipase reaction mixture during different time (0-2 h).

Data are triplicate determinations. 10 mL McIlvaine buffer (pH 7) spiked with glycidol at 1 mg/kg was shaken vigorously at 1000 strokes/min at room temperature for 0-2 h.

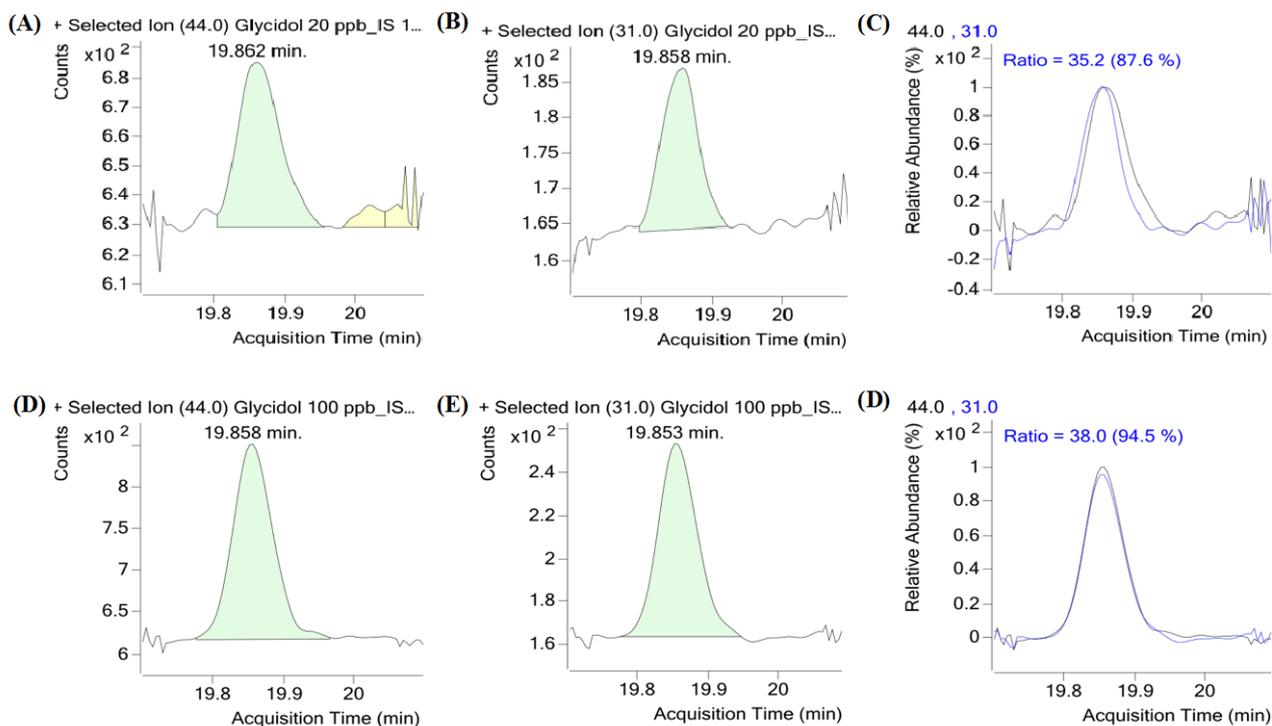


Figure S2. Selective ion monitoring (SIM) chromatograms of (A) quantifier (m/z 44), and (B) qualifier (m/z 31) of glycidol and (C) imposed SIM chromatograms of quantifier and qualifier of glycidol at 0.02 mg/kg (LOD). SIM chromatograms of (D) quantifier, and (E) qualifier of glycidol and (C) imposed SIM chromatograms of quantifier and qualifier of glycidol at 0.1 mg/kg (LOQ) in oil matrix.

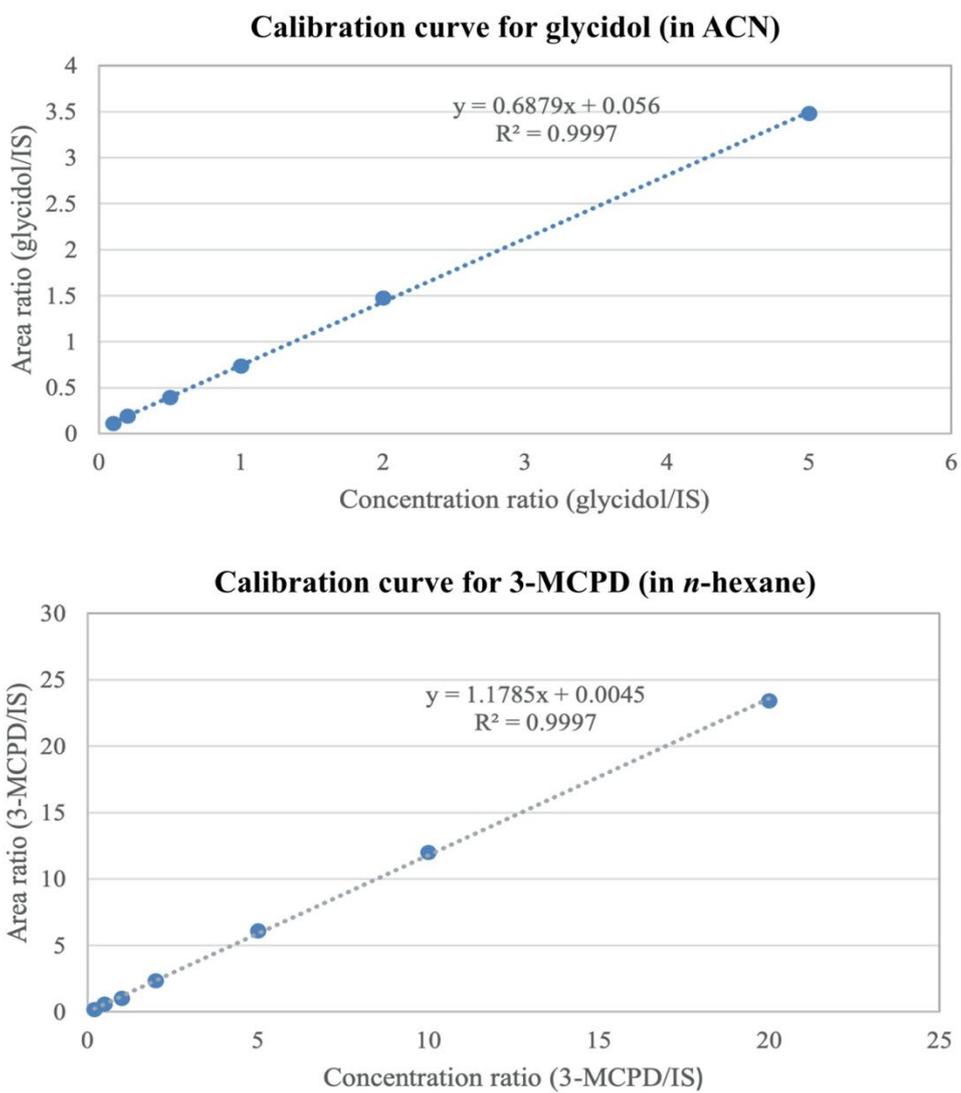


Figure S3. Calibration curves for glycidol and 3-MCPD in solvent

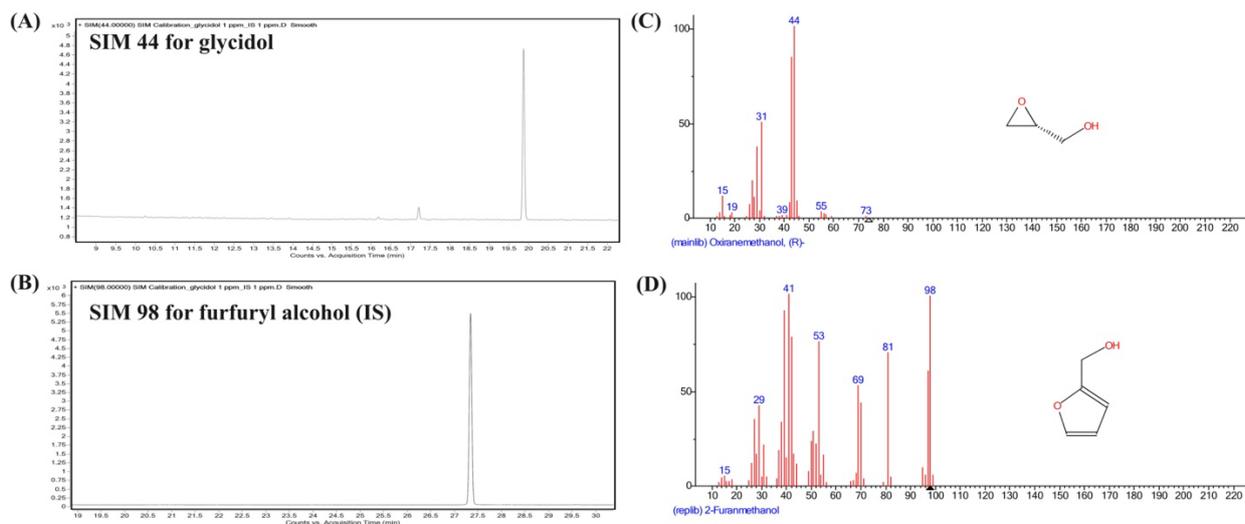


Figure S4. Selective ion monitoring (SIM) chromatograms of (A) glycidol (10 ppm) and (B) furfuryl alcohol (internal standard, IS) (1 ppm) in solvent. Mass spectra of (C) glycidol and (D) furfuryl alcohol in solvent.

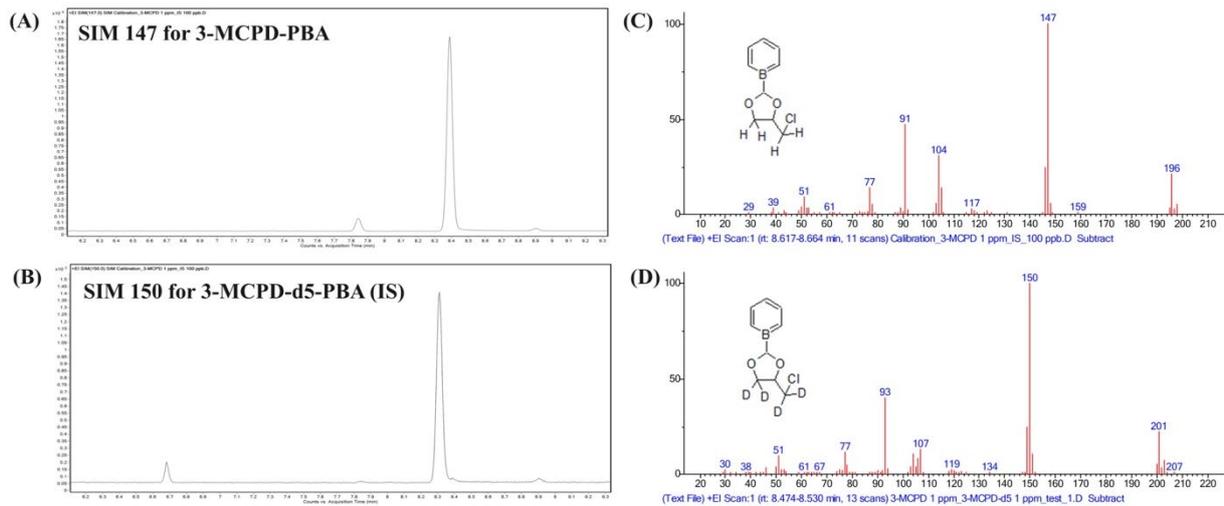


Figure S5. Selective ion monitoring (SIM) chromatograms of (A) PBA derivatives of 3-MCPD (1 ppm) and (B) PBA derivatives of 3-MCPD-*d*₅ (internal standard, IS) (100 ppb) in solvent. Mass spectra of (C) PBA derivatives of 3-MCPD and (D) PBA derivatives of 3-MCPD-*d*₅ in solvent.

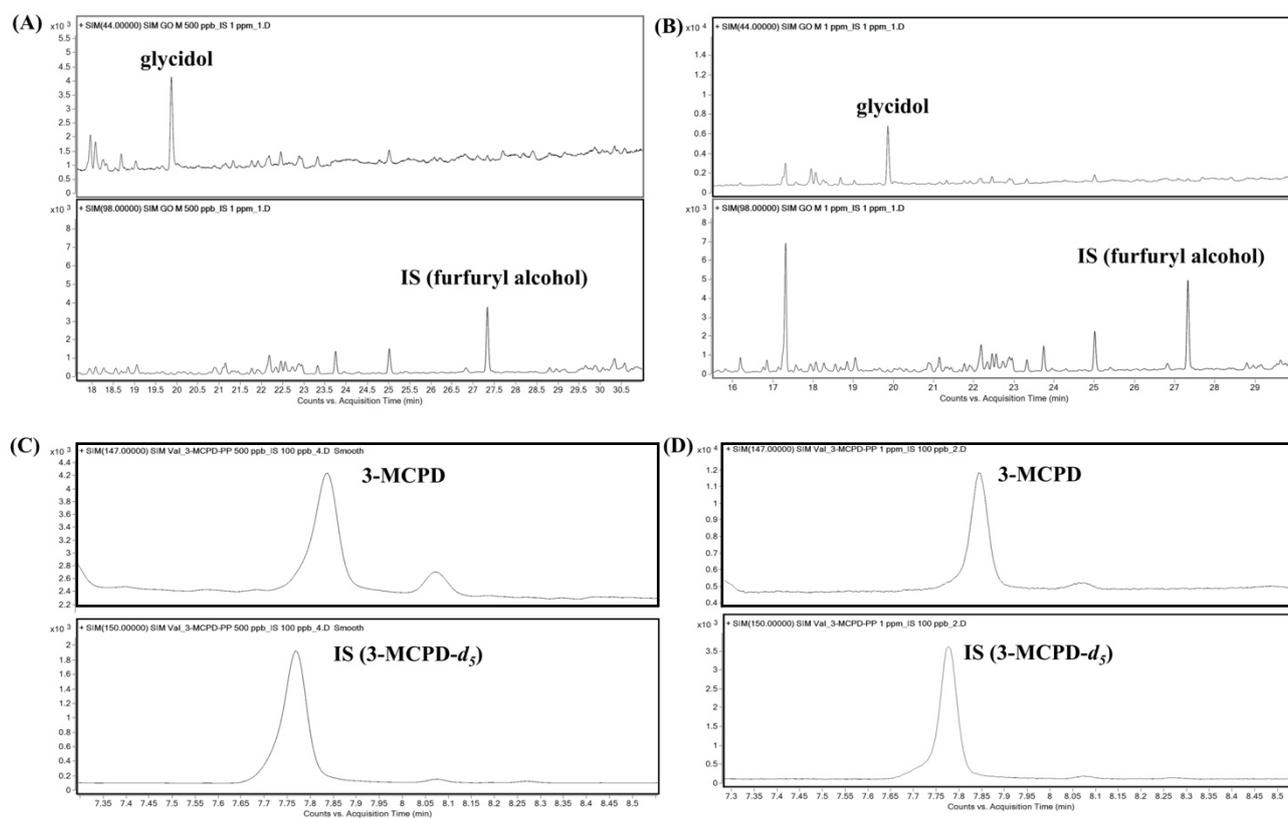


Figure S6. Selective ion monitoring (SIM) chromatograms of (A) glycidol (0.5 mg/kg) and IS (1.0 mg/kg), (B) glycidol (1.0 mg/kg) and IS (1.0 mg/kg), (C) 3-MCPD (0.5 mg/kg) and IS (0.1 mg/kg), (D) 3-MCPD (1.0 mg/kg) and IS (0.1 mg/kg) in oil matrix (2 g purified extra-virgin olive oil).