

SUPPORTING INFORMATION

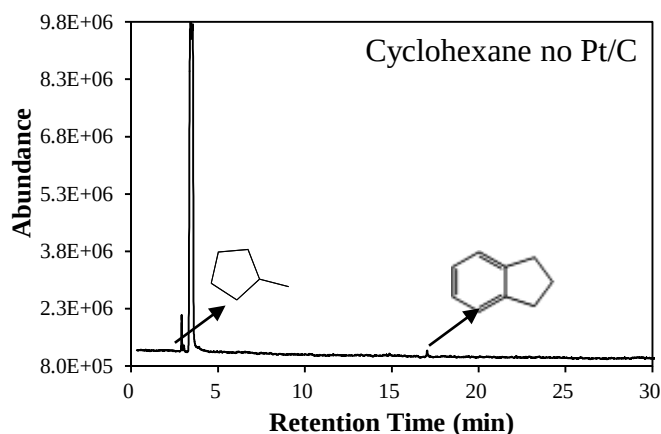
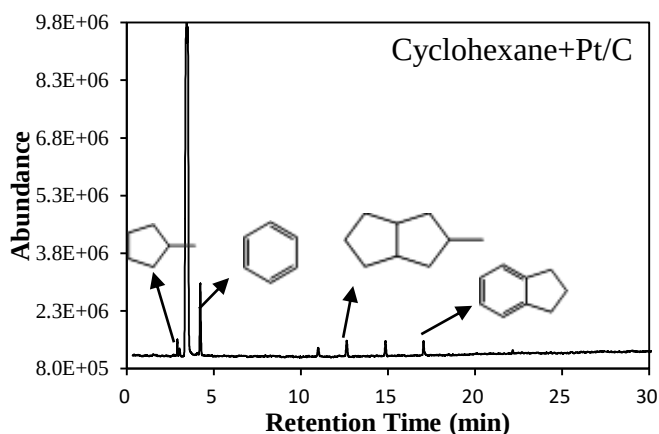
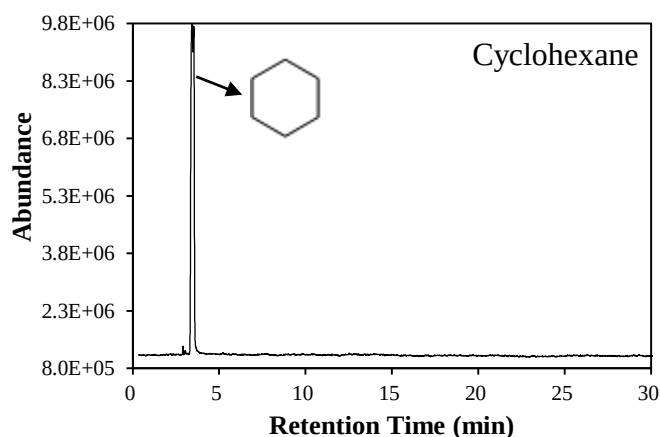
Hydrotreating the Low Boiling Point Fraction of Biocrude in Hydrogen Donor Solvents for Production of Trace-Sulfur Liquid Fuel

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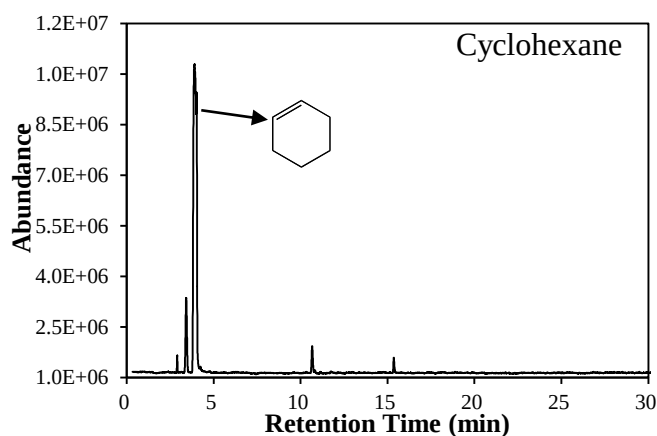
[†] Shaanxi Key Laboratory of Energy Chemical Process Intensification, School of Chemical Engineering and Technology, Xi'an Jiaotong University, No. 28, West Xianning Road, Xi'an, Shaanxi, 710049, P.R. China.

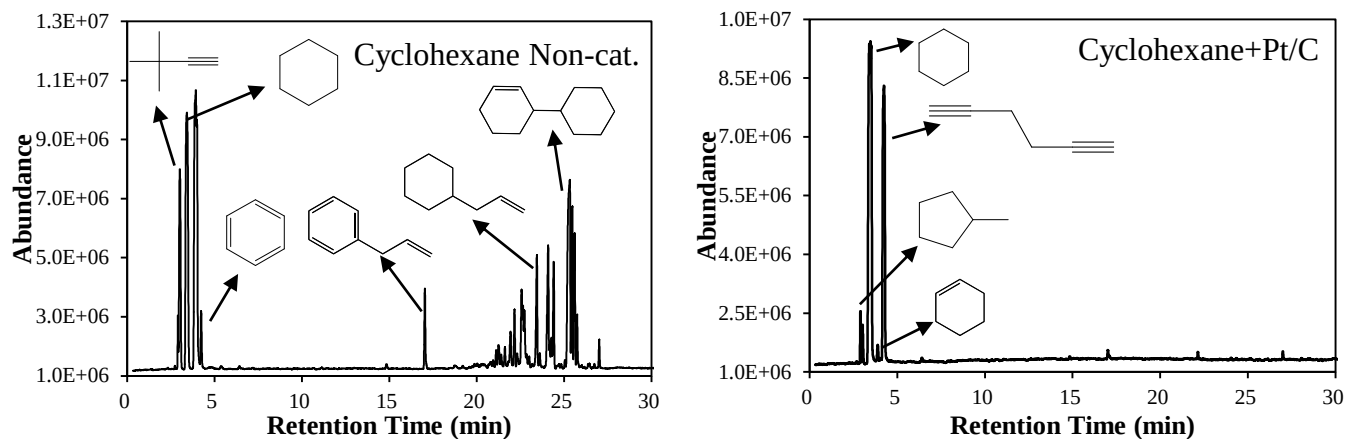
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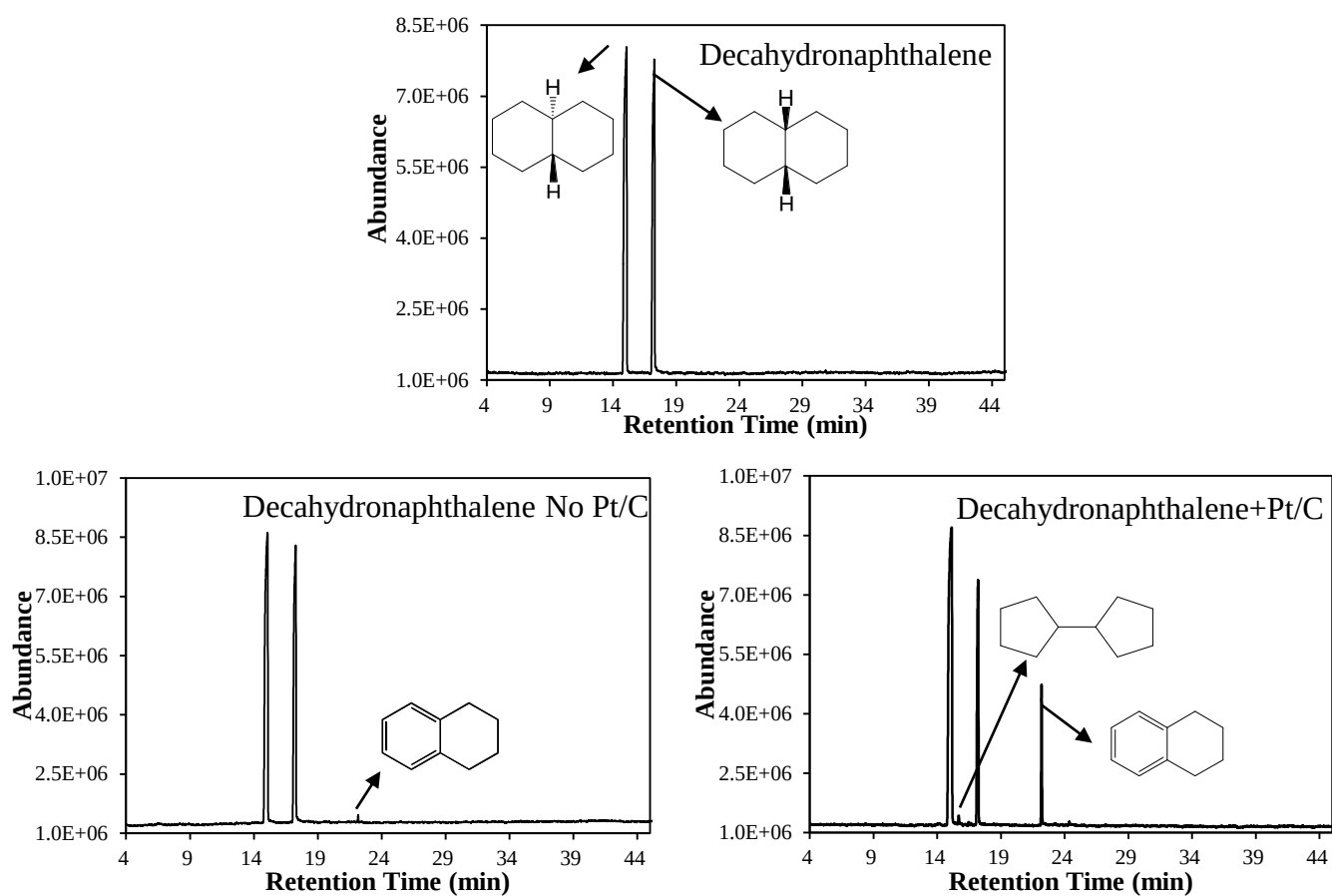


S1 Total ion chromatograms of cyclohexane and its derivatives produced with and without Pt/C.

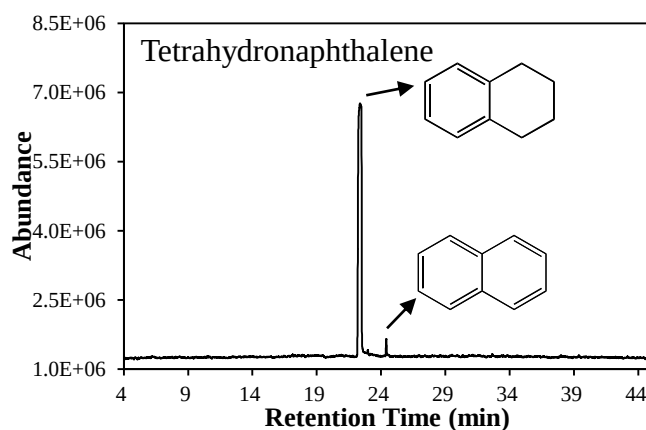


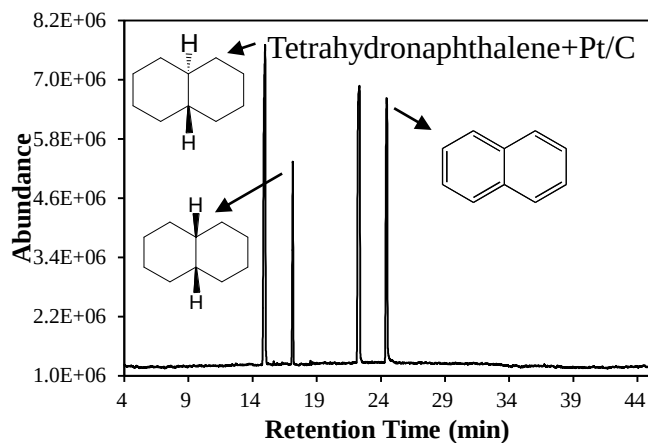
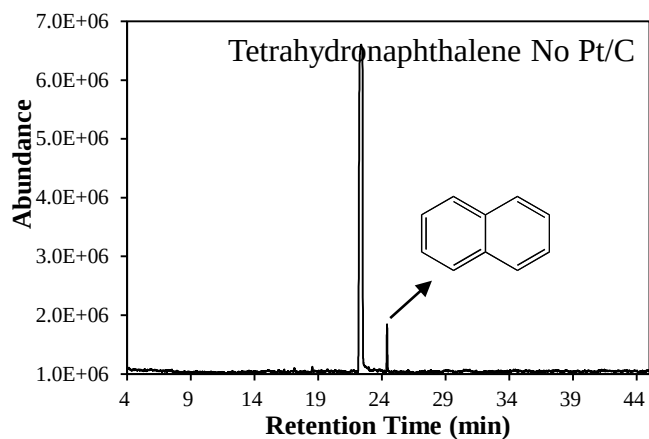


S2 Total ion chromatograms of cyclohexane and its derivatives produced with and without Pt/C.

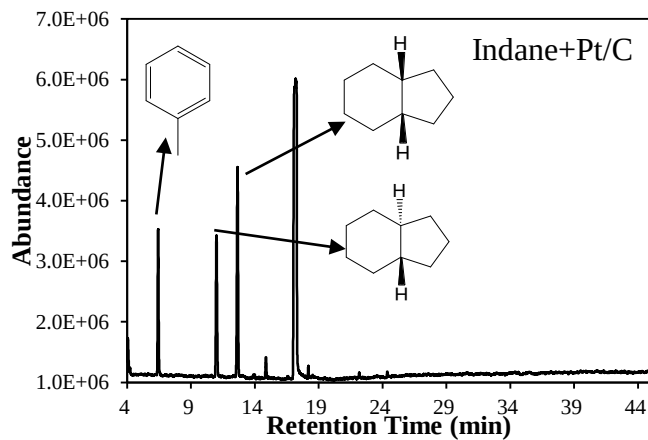
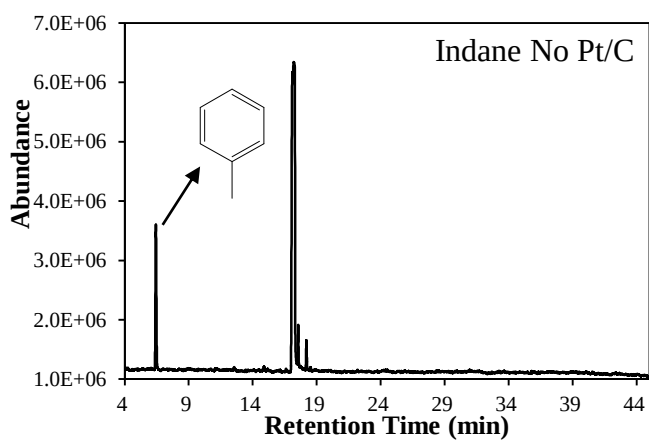
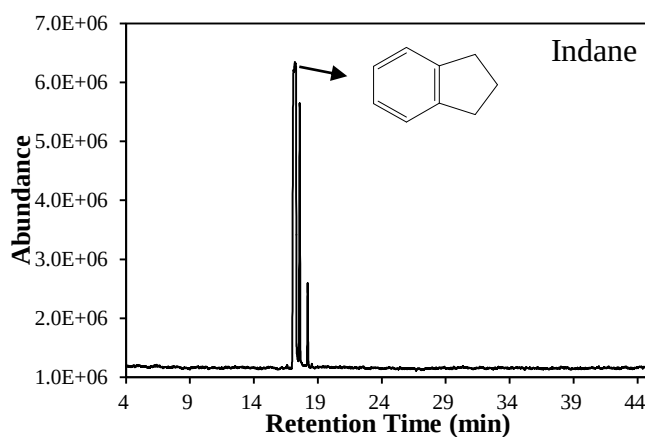


S3 Total ion chromatograms of decahydronaphthalene and its derivatives produced with and without Pt/C.

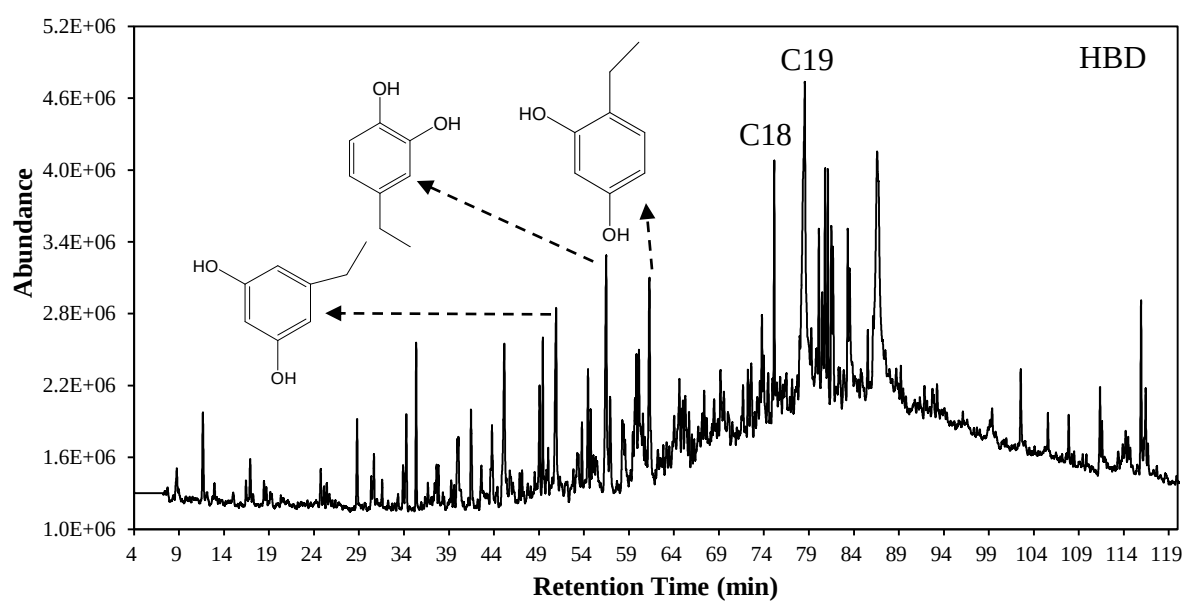
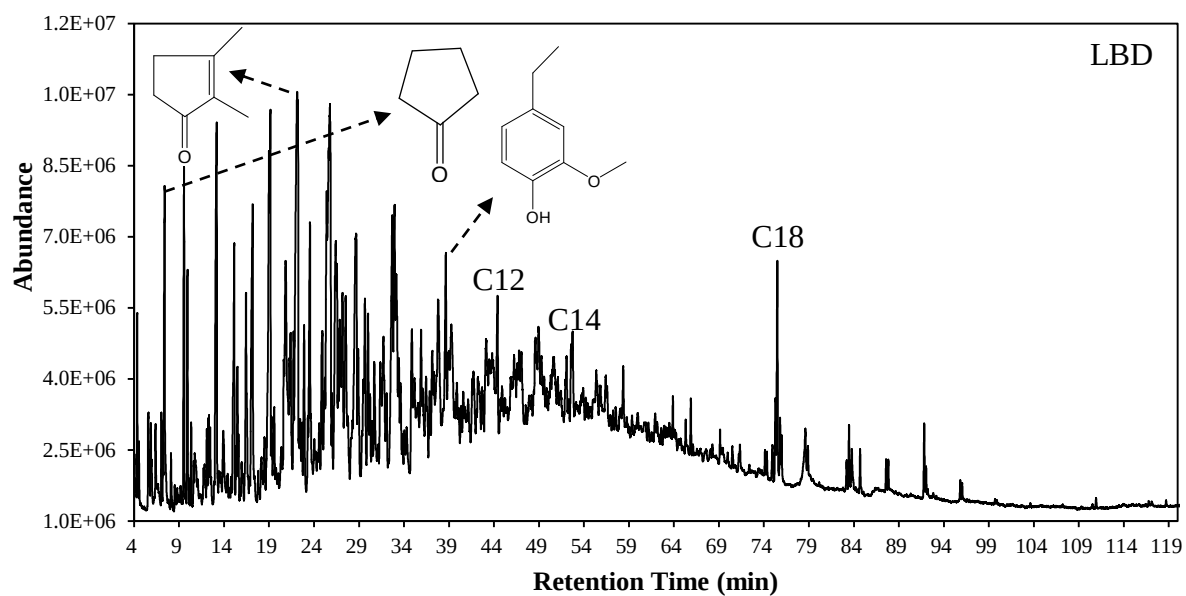
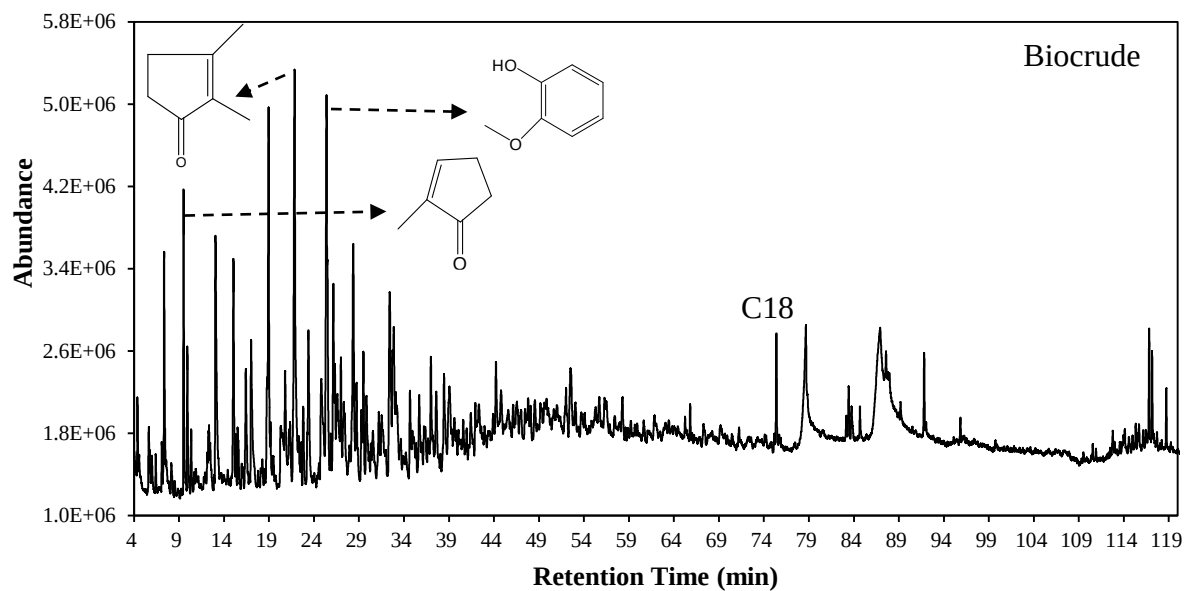




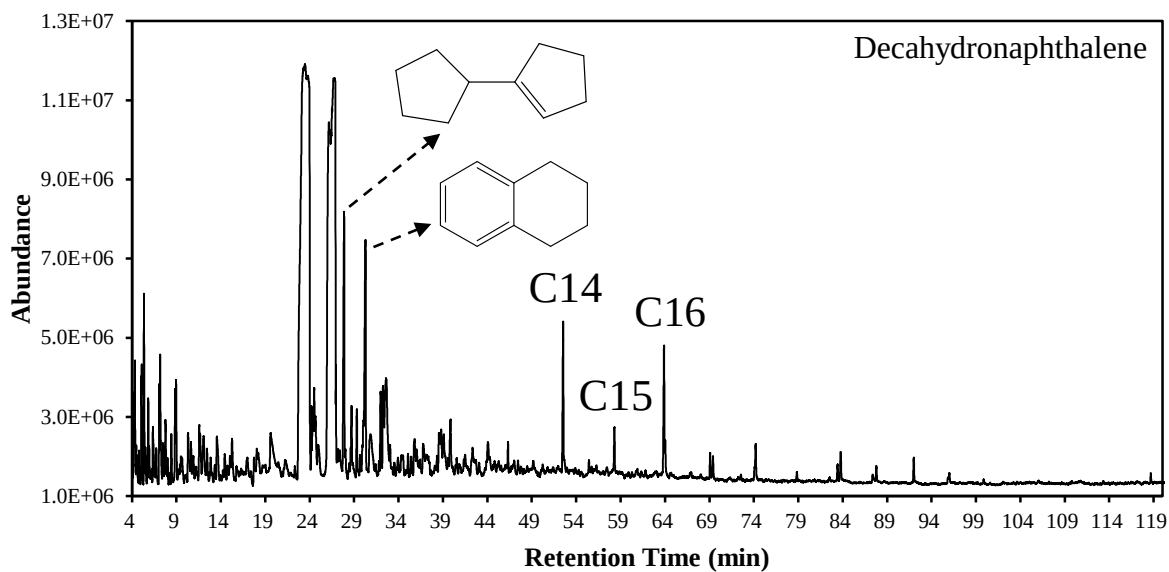
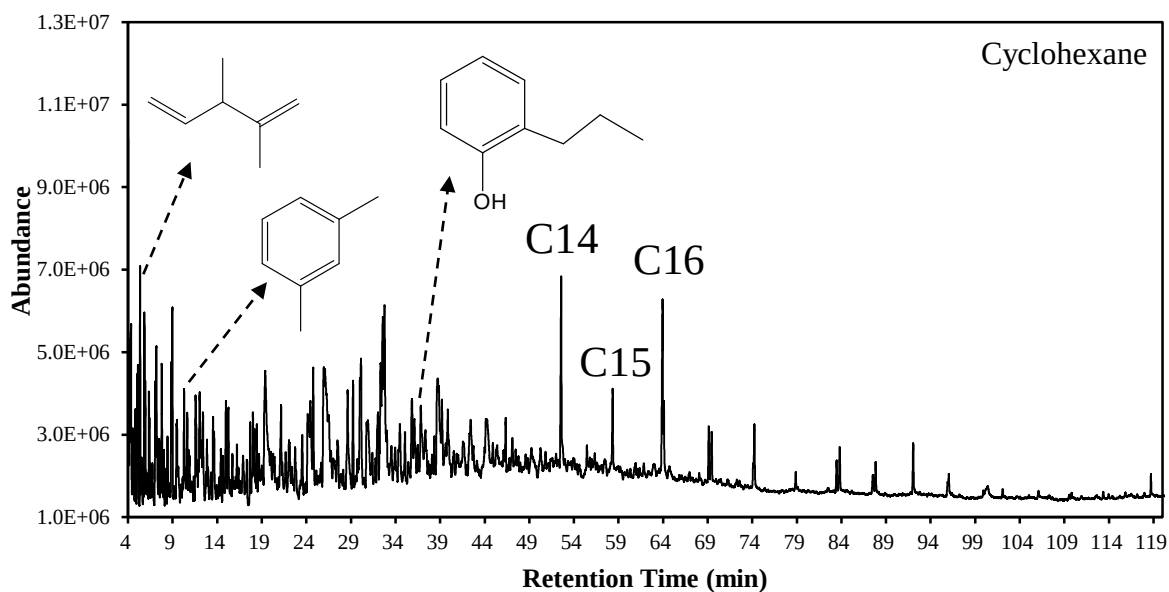
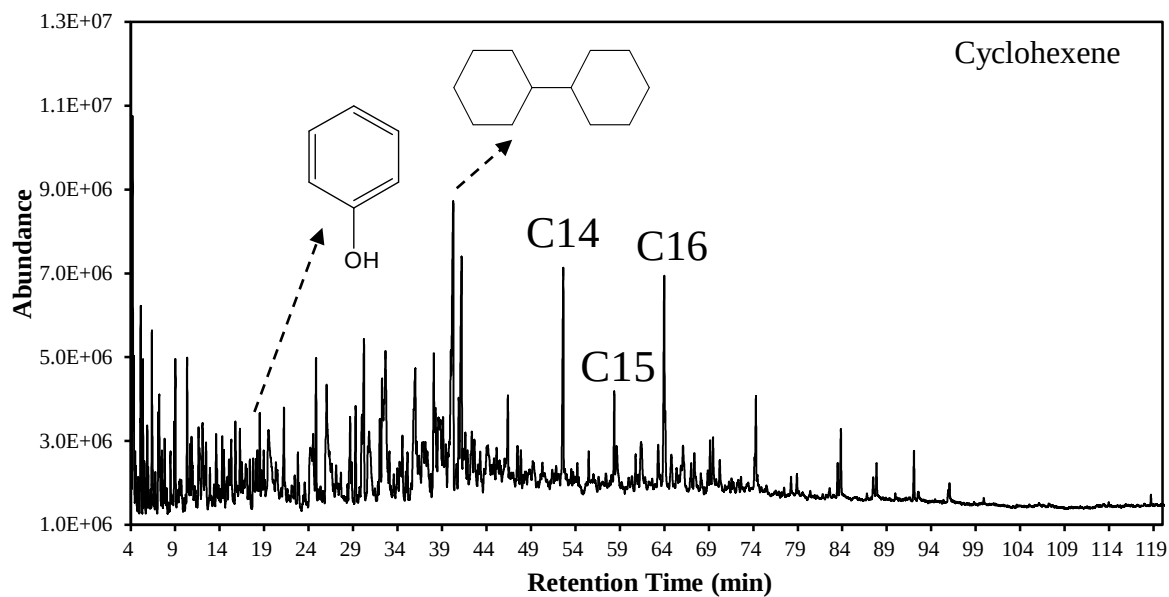
S4 Total ion chromatograms of tetrahydronaphthalene and its derivatives produced with and without Pt/C.

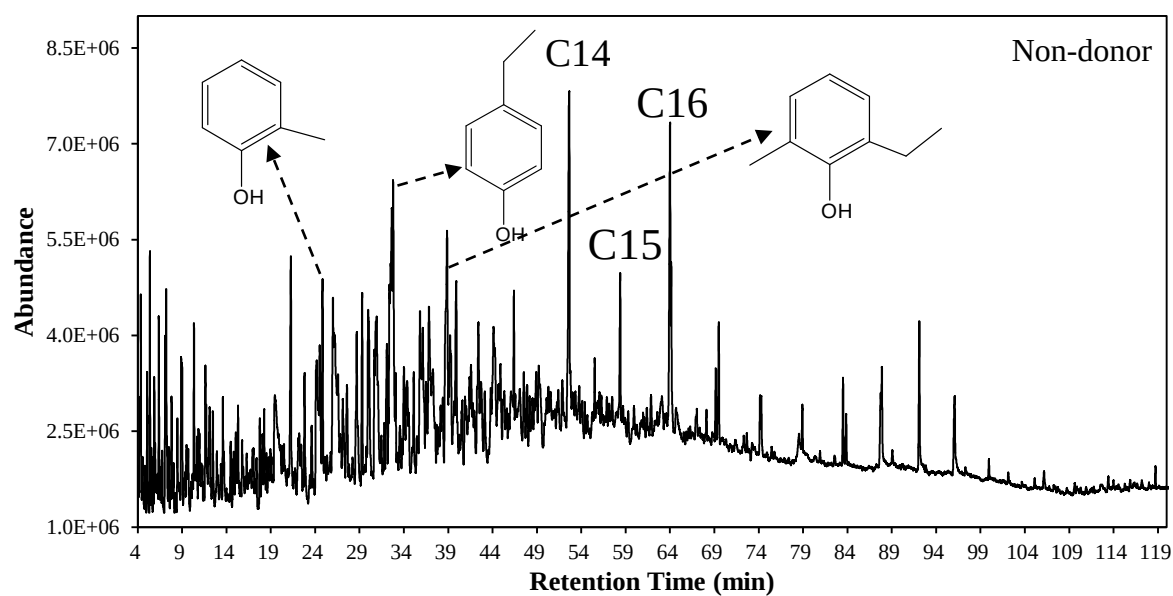
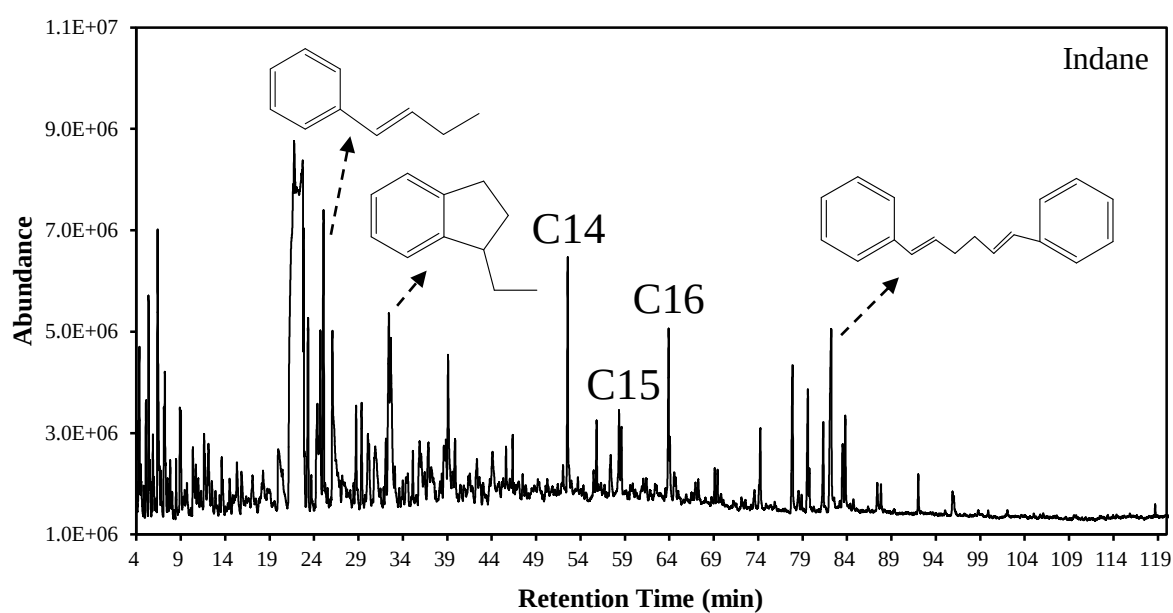
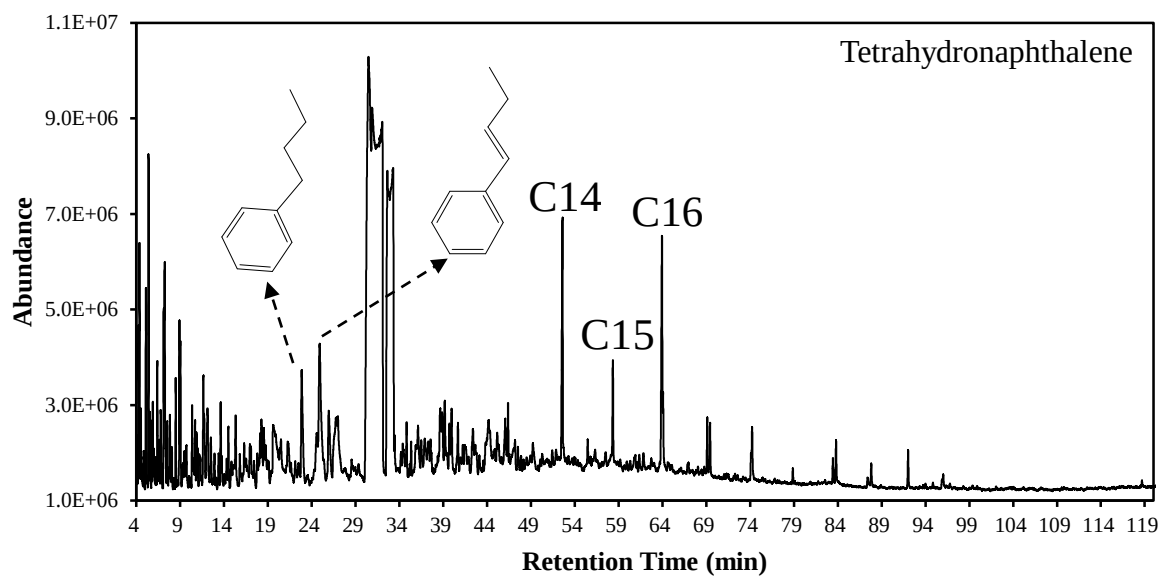


S5 Total ion chromatograms of Indane and its derivatives produced with and without Pt/C.

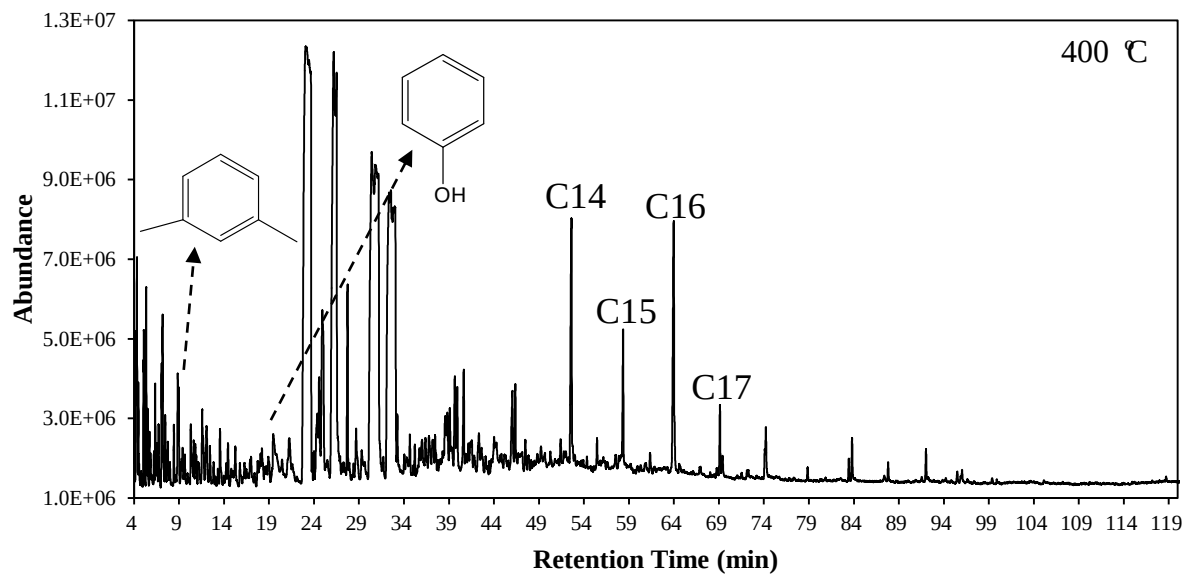
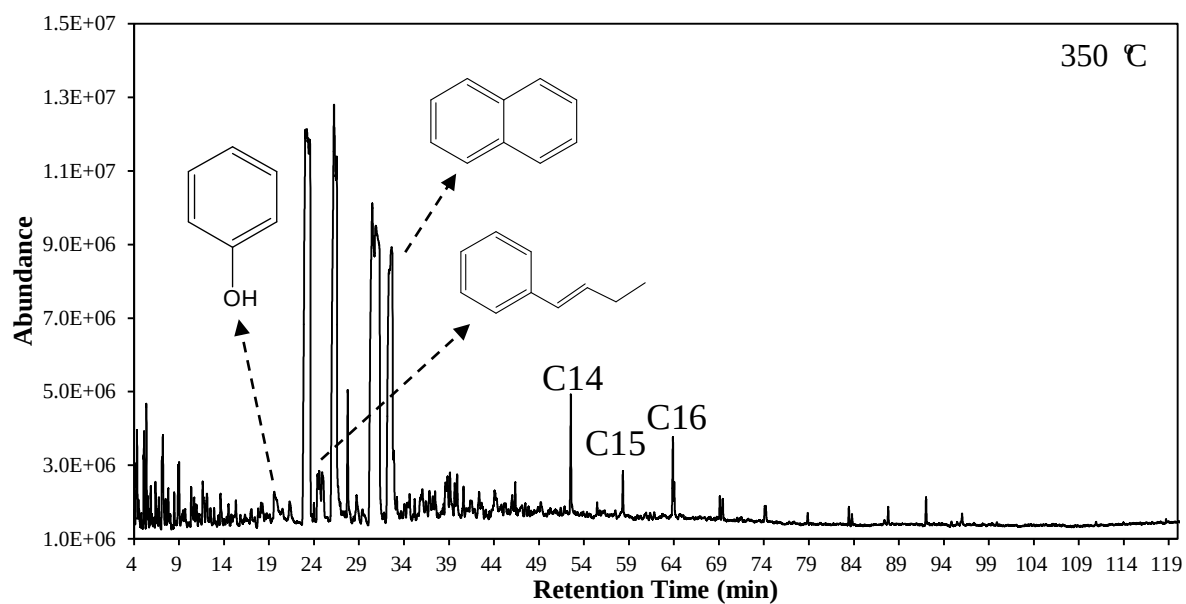
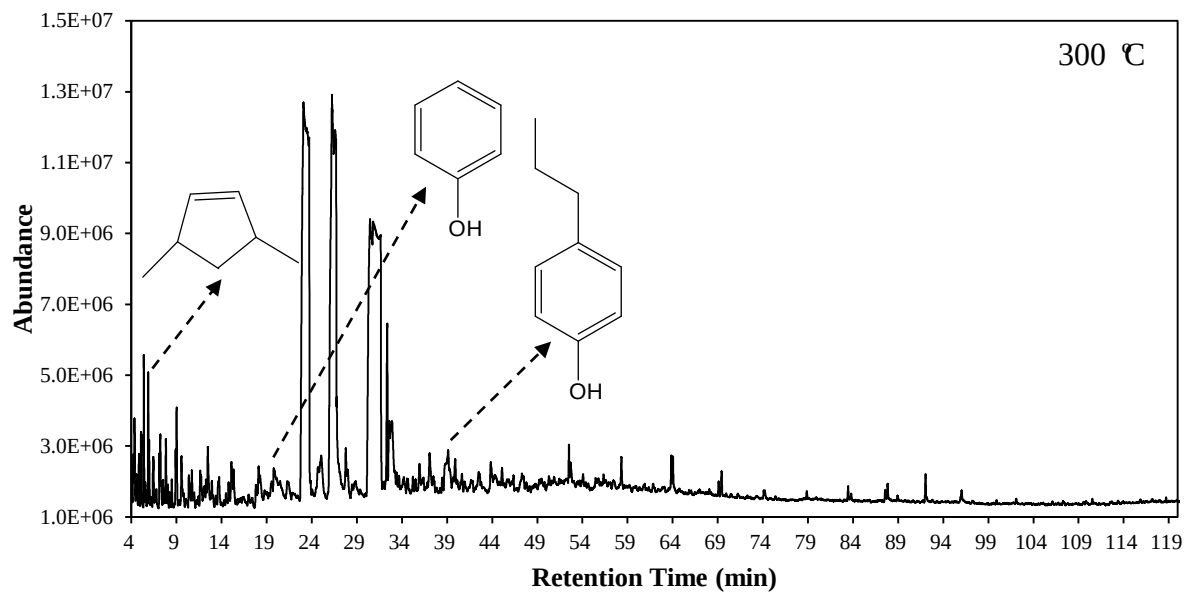


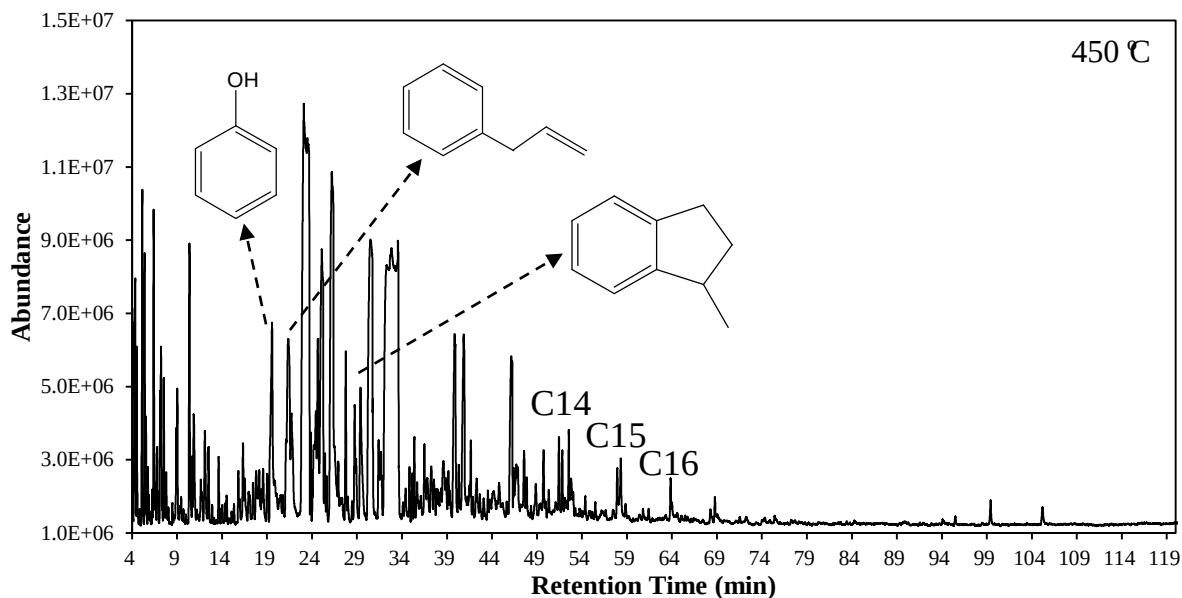
S6 Total ion chromatograms of biocrude, LBD, and HBD.



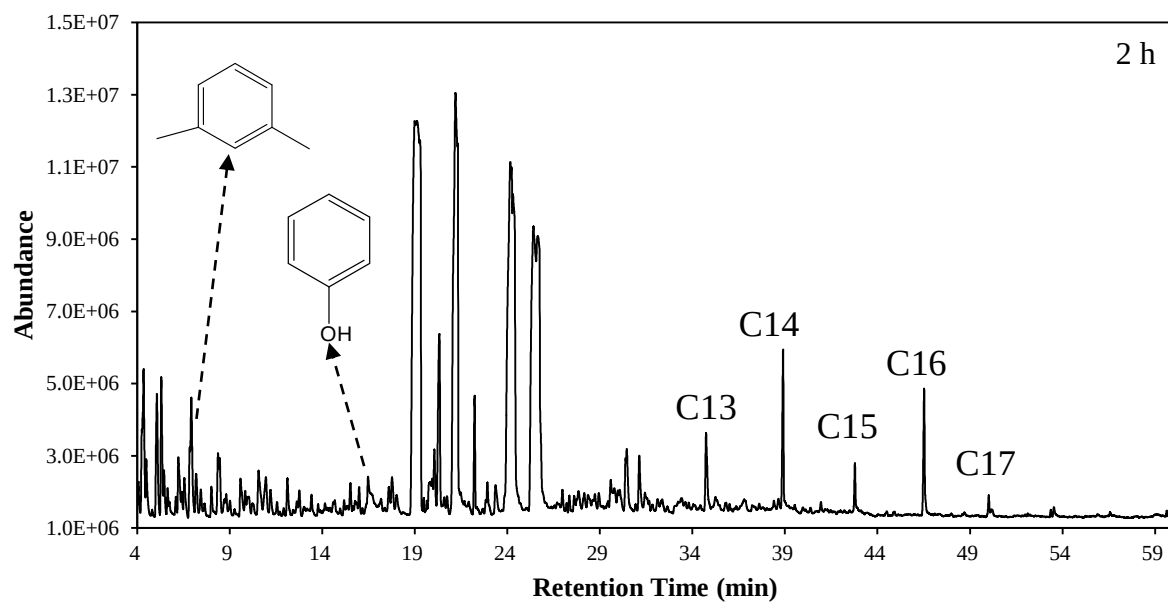
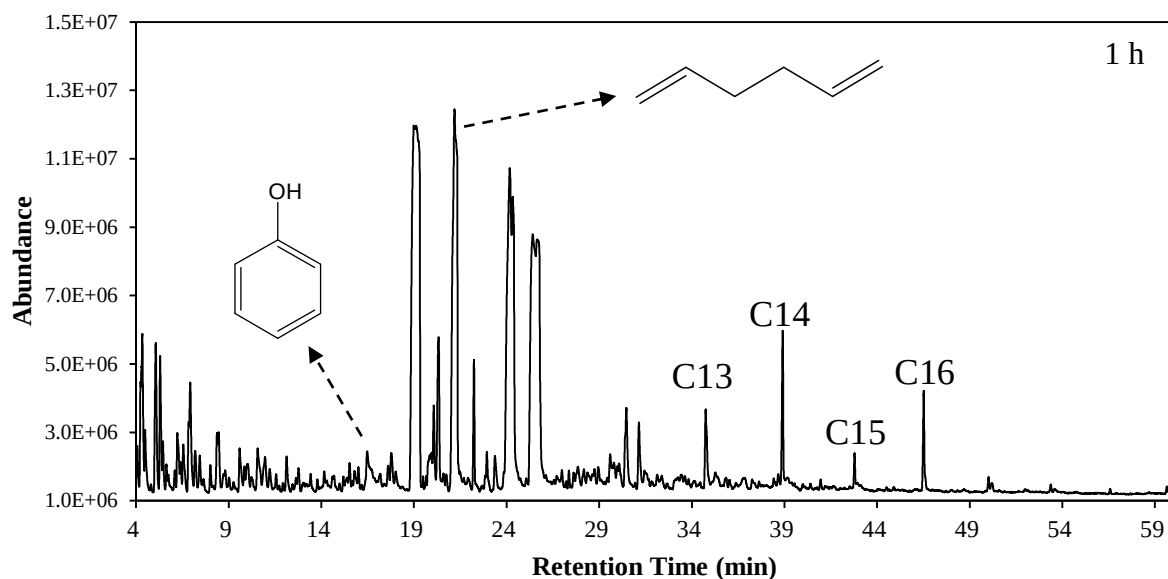


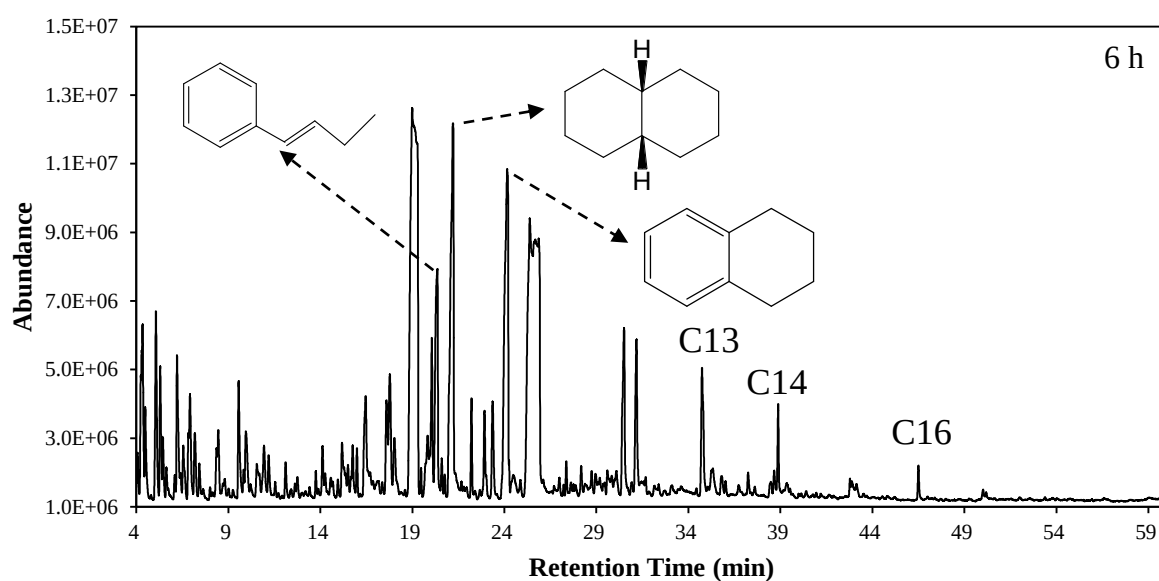
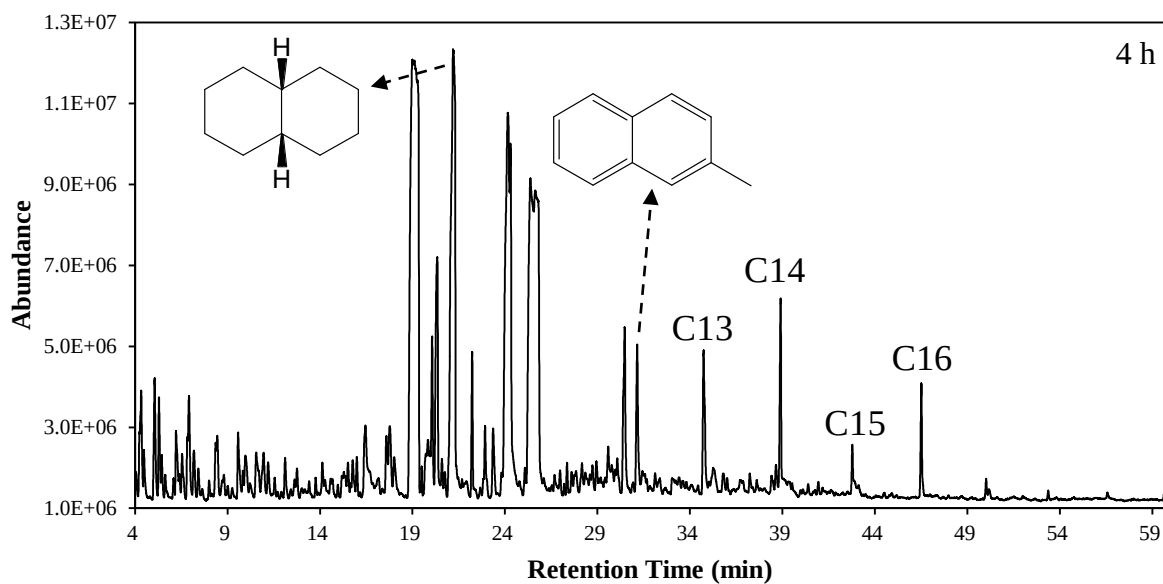
S7 Total ion chromatograms of upgraded oils produced with different types of HDSs (350 °C, 2 h, 6 MPa H₂, 5 wt.% Pt/C, LBD:HDS=1:1).



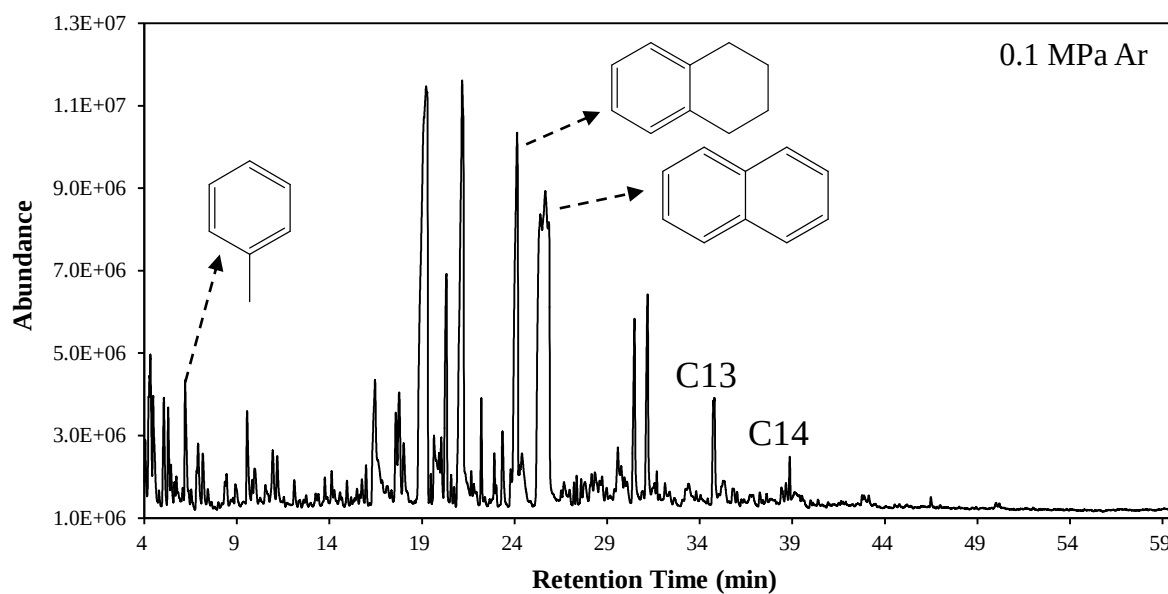


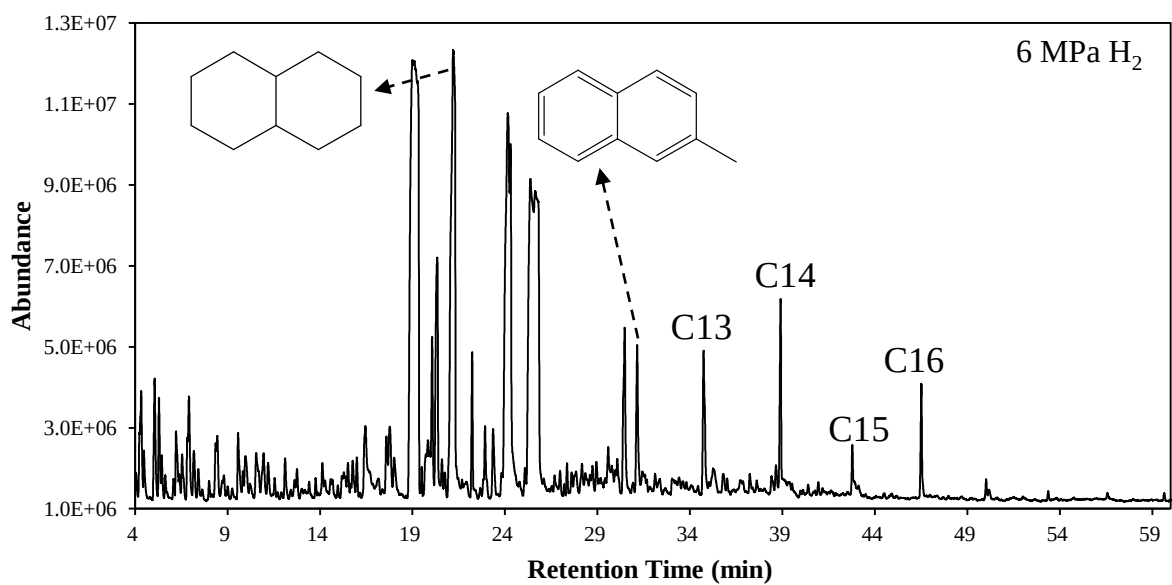
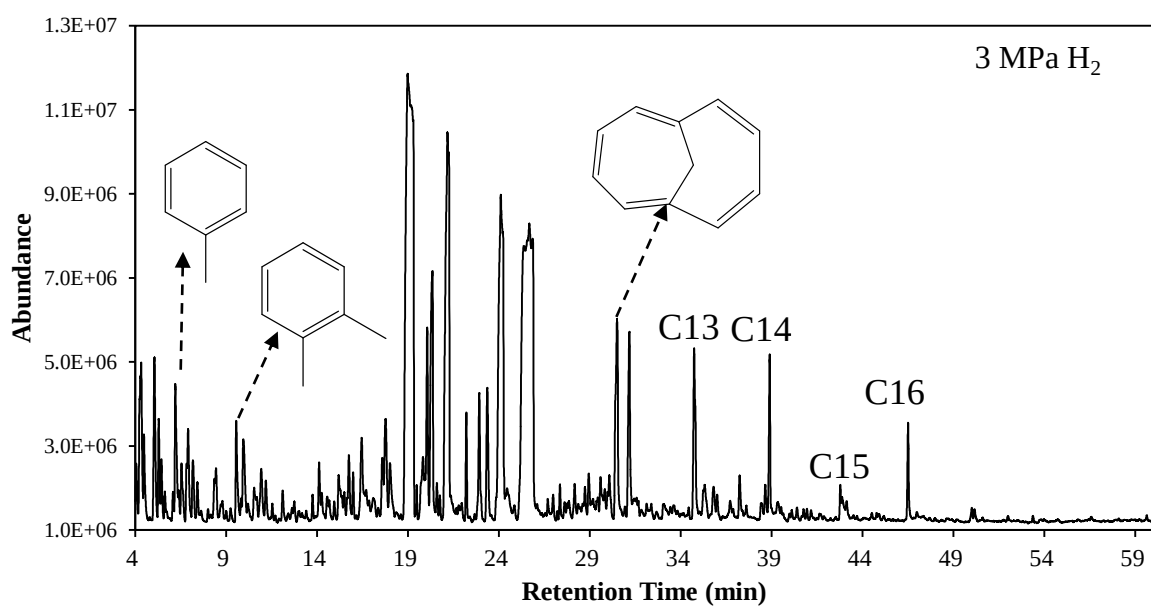
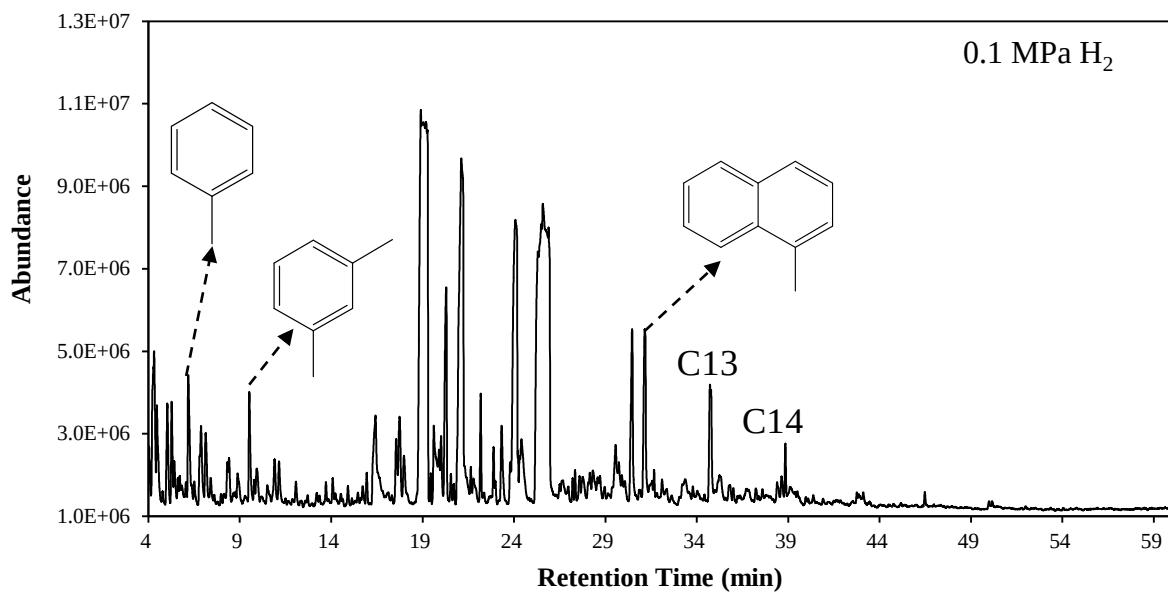
S8 Total ion chromatograms of upgraded oils produced at different temperatures (2 h, 6 MPa H₂, 5 wt.% Pt/C, LBD:HDS (decahydronaphthalene:tetrahydronaphthalene=1:1)=1:1).

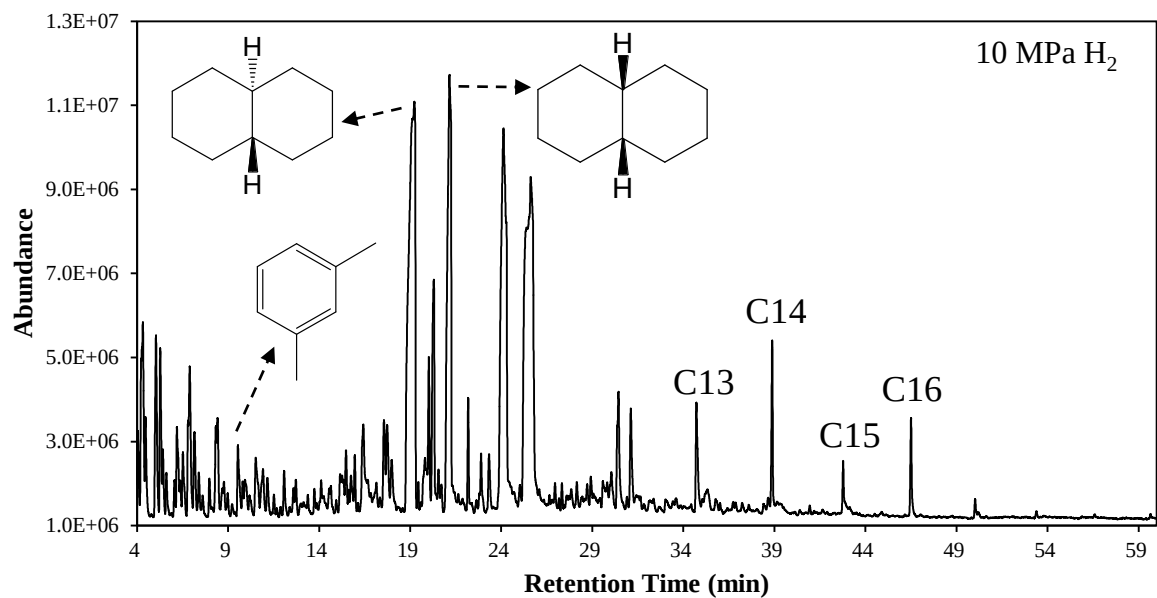




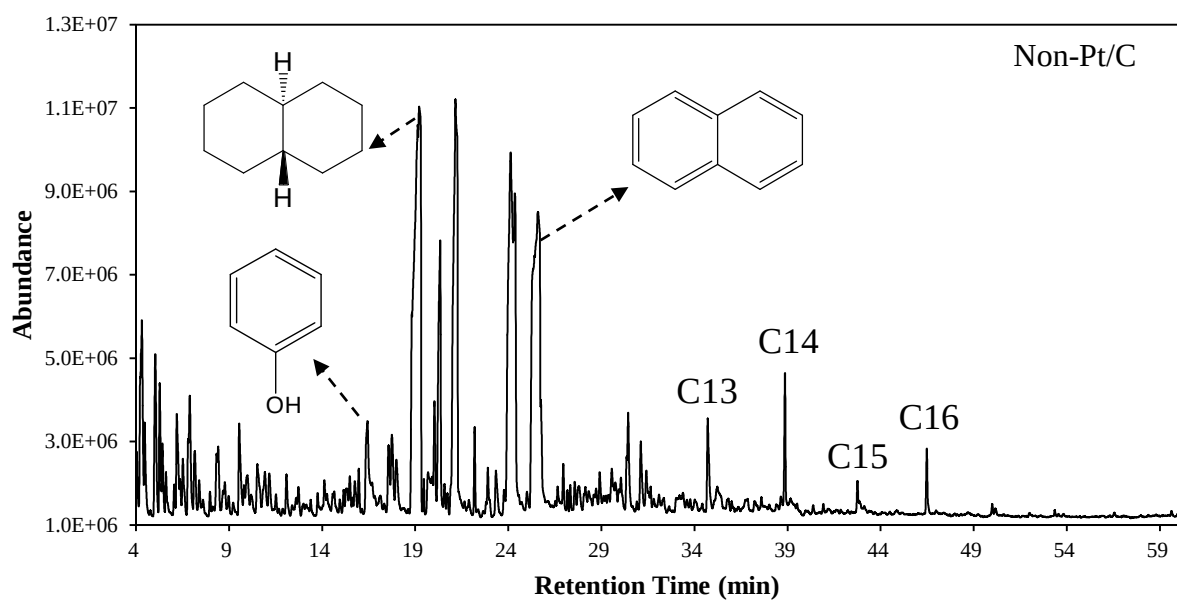
S9 Total ion chromatograms of upgraded oils produced at different reaction time (400 °C, 6 MPa H₂, 5 wt.% Pt/C, LBD:HDS (decahydronaphthalene:tetrahydronaphthalene=1:1)=1:1).

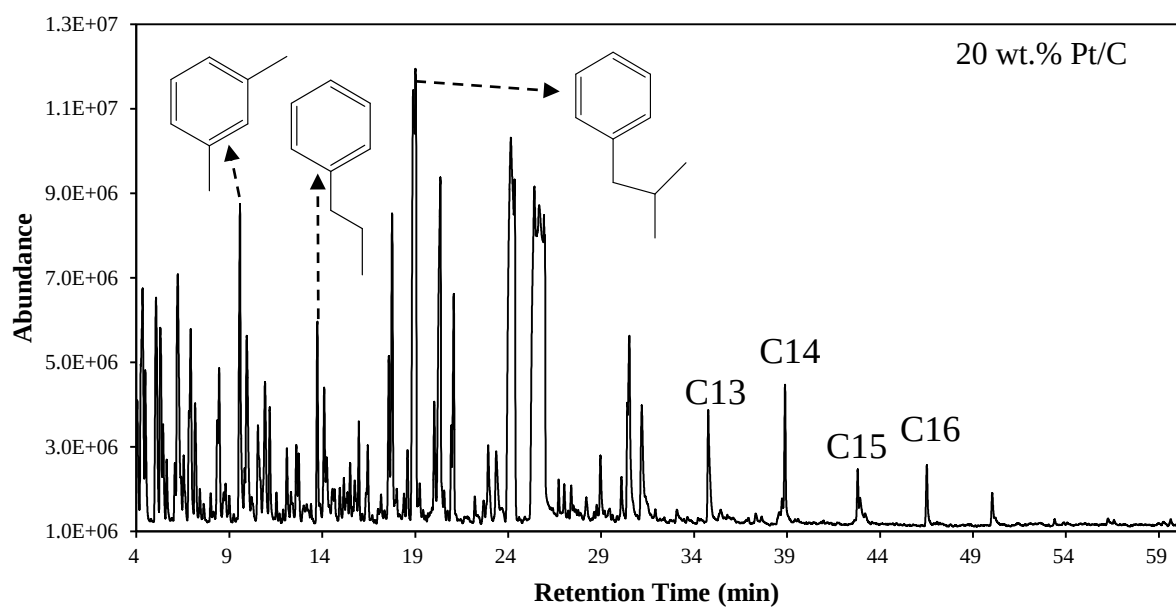
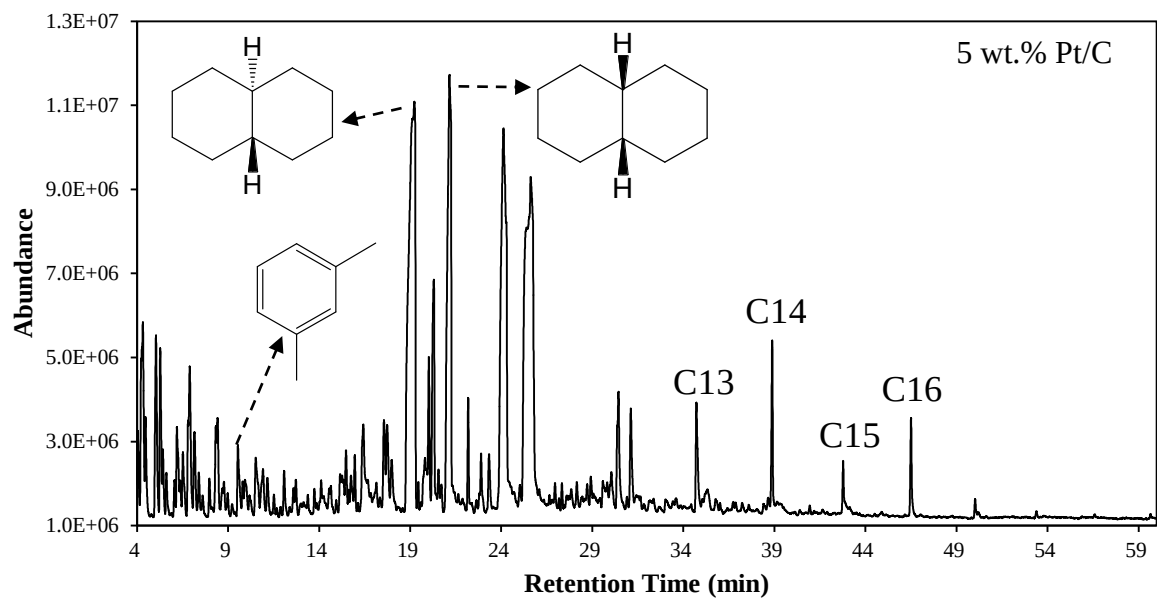




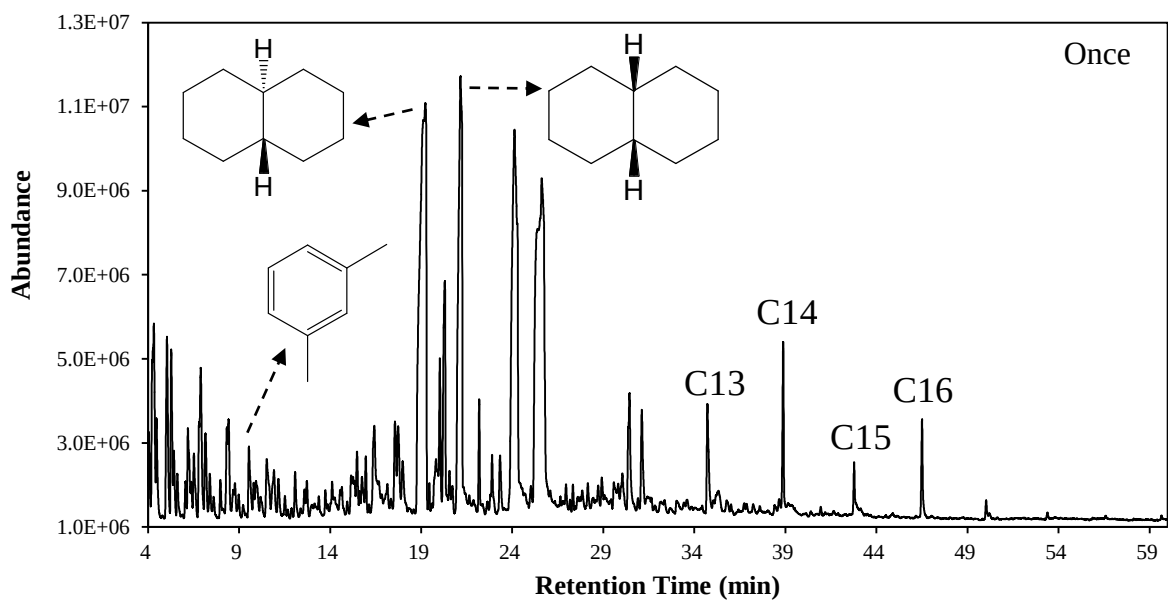


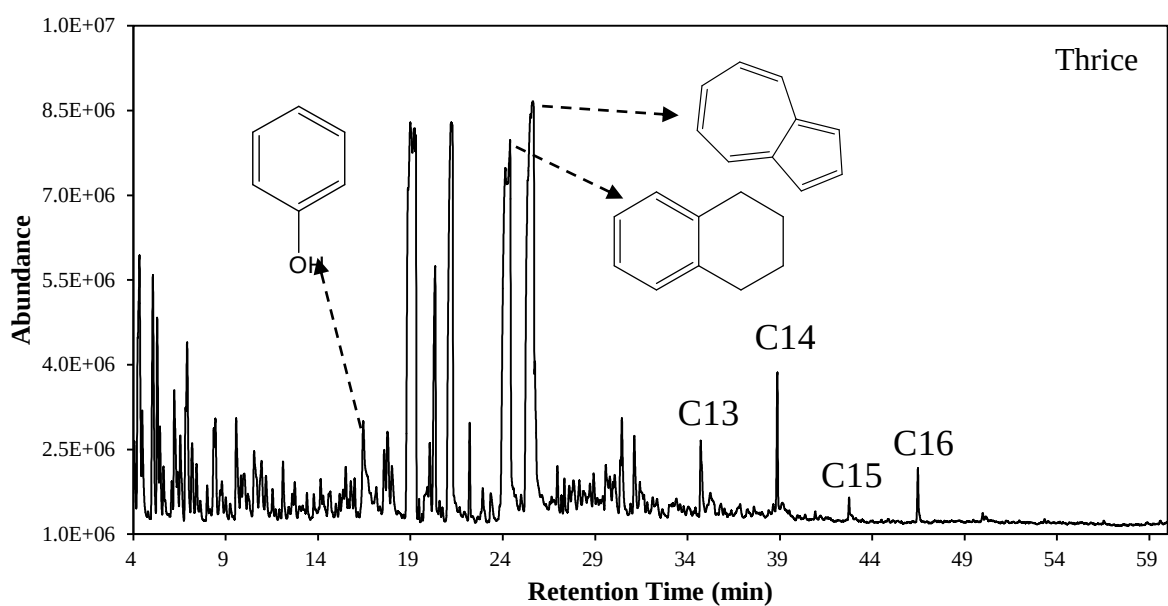
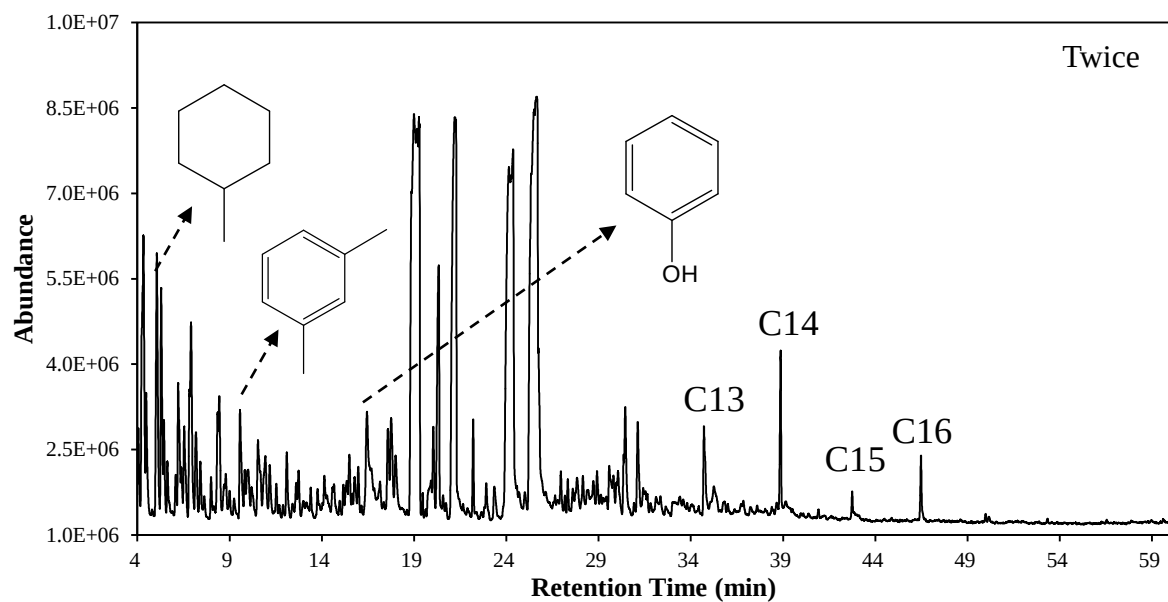
S10 Total ion chromatograms of upgraded oils produced under different hydrogen pressures (400 °C, 4 h, 5 wt.% Pt/C, LBD:HDS(decahydronaphthalene:tetrahydronaphthalene=1:1)=1:1).





S11 Total ion chromatograms of upgraded oils produced at different catalyst loadings (400 °C, 4 h, 10 MPa H₂, LBD:HDS (decahydronaphthalene:tetrahydronaphthalene=1:1)=1:1).





S12 Total ion chromatograms of upgraded oils produced at different catalyst reuse times (400 °C, 4 h, 10 MPa H₂, 5 wt.% Pt/C (reuse), LBD:HDS (decahydronaphthalene:tetrahydronaphthalene=1:1)=1:1).