Supporting Information

Catalytic conversion of glucose into alkanediols over nickel-based catalysts: a mechanism study

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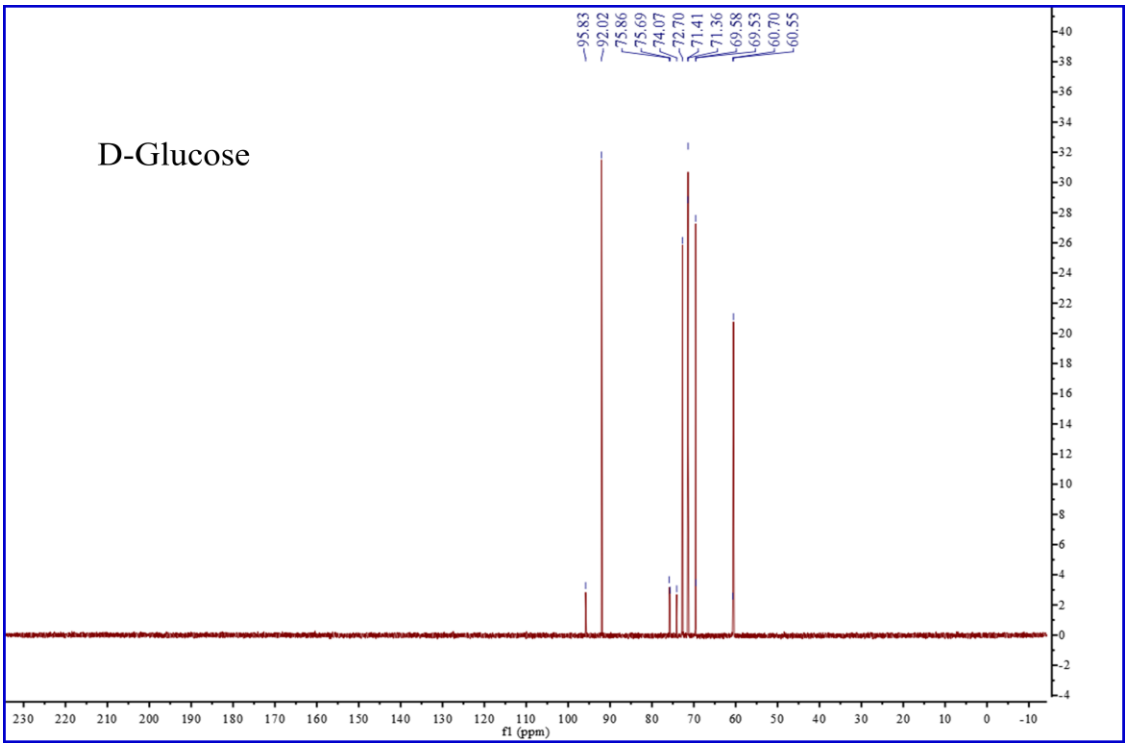

Figure S1:[13]C NMR of D-glucose.

β-D-Glucopyranose and α-D-Glucopyranose mixture: [13]C NMR (125MHz, D_2O) δ 95.83 (β C-1), 92.02 (α C-1), 75.86 (β C-5), 75.69 (β C-3), 74.07 (β C-2), 72.70 (α C-3), 71.41 (α C-5), 71.36 (α C-2), 69.58 (α C-4), 69.53 (β C-4), 60.70 (β C-6), 60.55 (α C-6).[1]

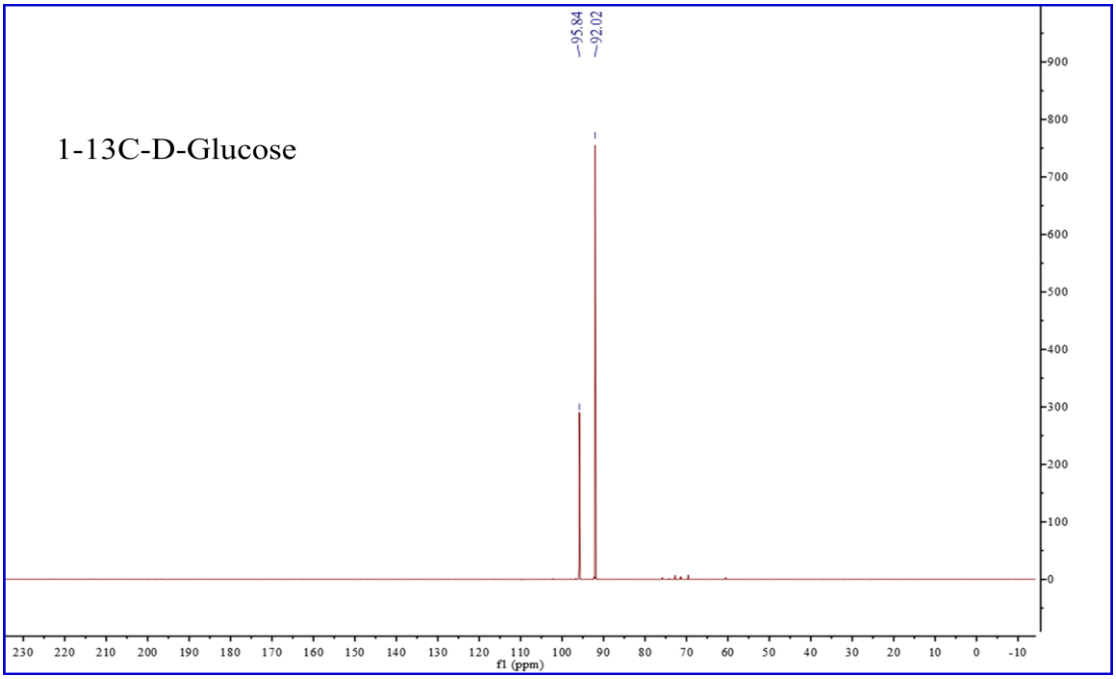

Figure S2:^{13}C NMR of 1-^{13}C-D-glucose.

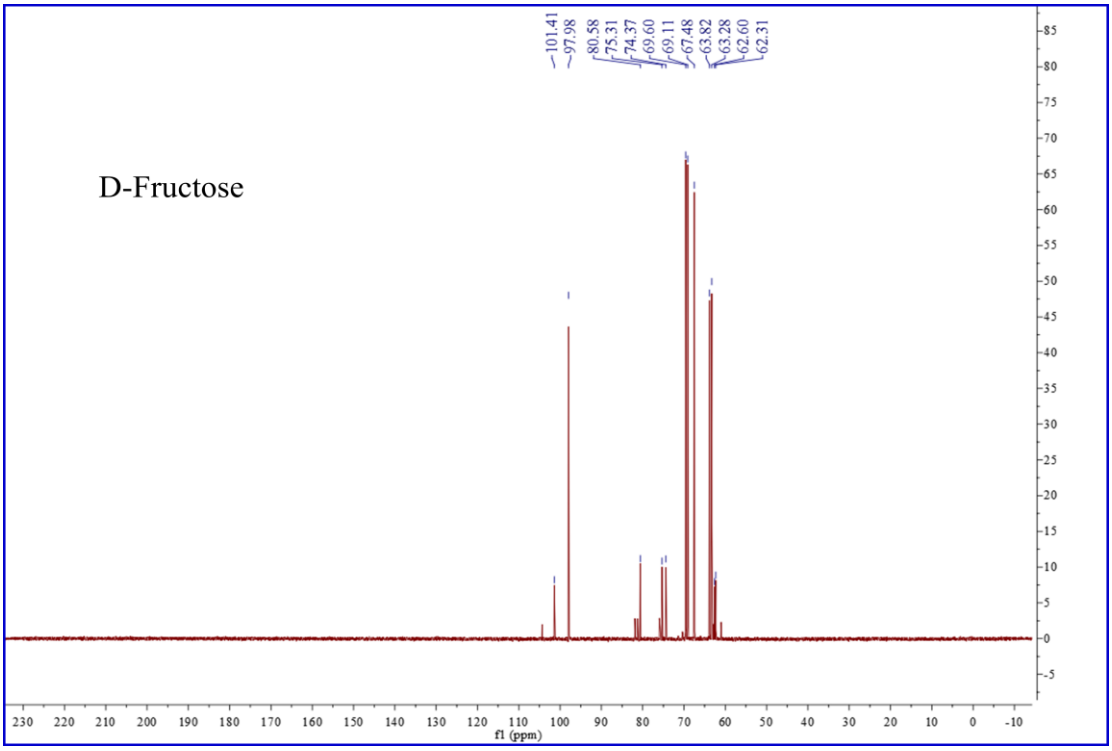

Figure S3:^{13}C NMR of D-fructose.

β-D-Fructopyranose and β-D-Fructofuranose mixture: ^{13}C NMR (125MHz, D_2O), δ 101.41 (fur C-2), 97.98 (pyr C-2), 80.58 (fur C-5), 75.31 (fur C-3), 74.37 (fur C-4), 69.60 (pyr C-4), 69.11 (pyr C-5), 67.48 (pyr C-3), 63.82 (pyr C-1), 63.28 (pyr C-6), 62.60 (fur C-1), 62.31 (fur C-6).[1]

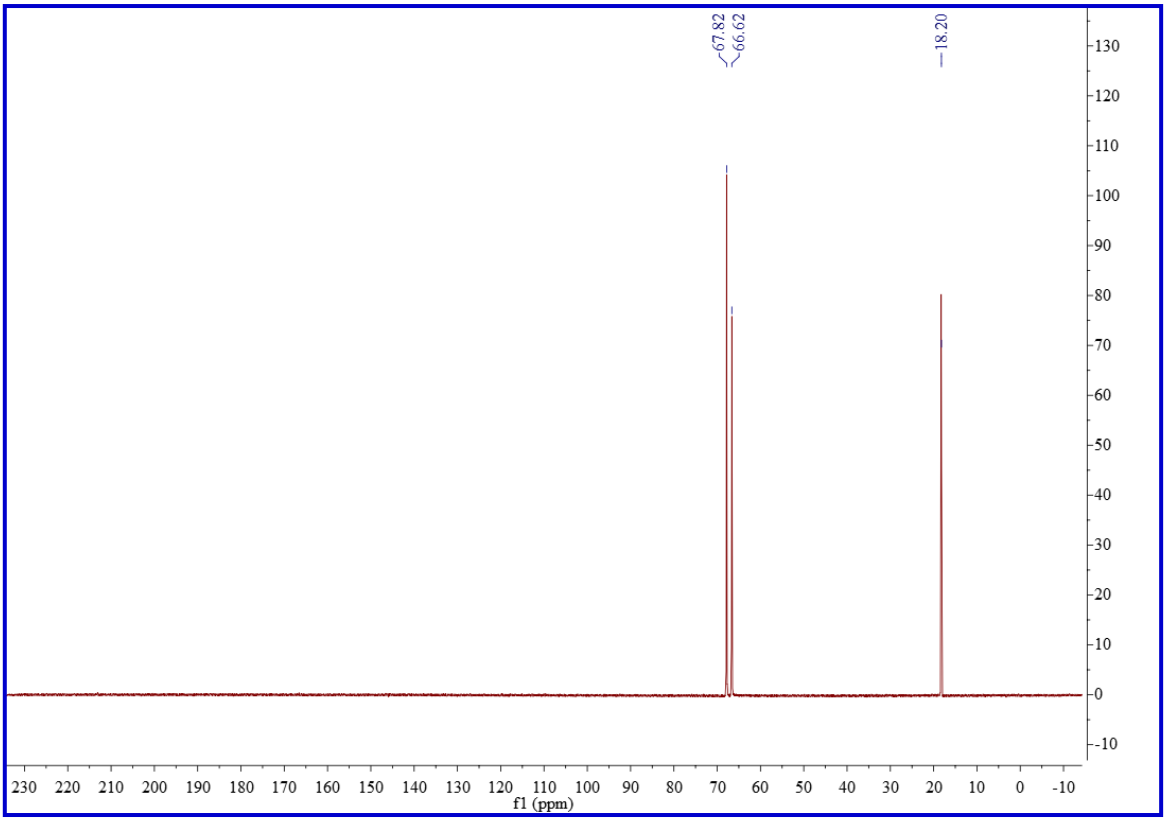

Figure S4:^{13}C NMR of 1, 2- Propanediol (PDO)

1, 2- Propanediol: ^{13}C NMR (125MHz, D_2O), δ 67.82 (C-2), 66.62 (C-1), 18.2 (C-3).

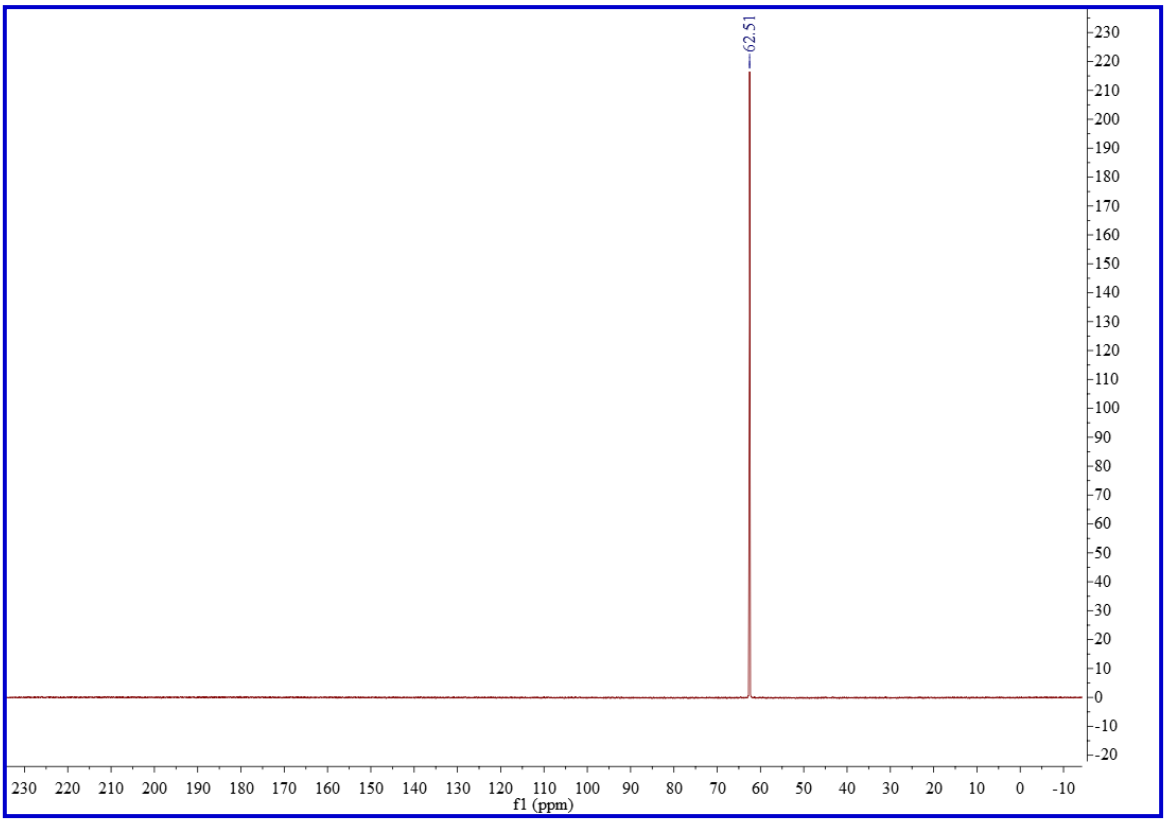

Figure S5:^{13}C NMR of Ethylene glycol (EG)

Ethylene glycol: ^{13}C NMR (125MHz, D_2O), δ 62.51 (C-1, C-2)

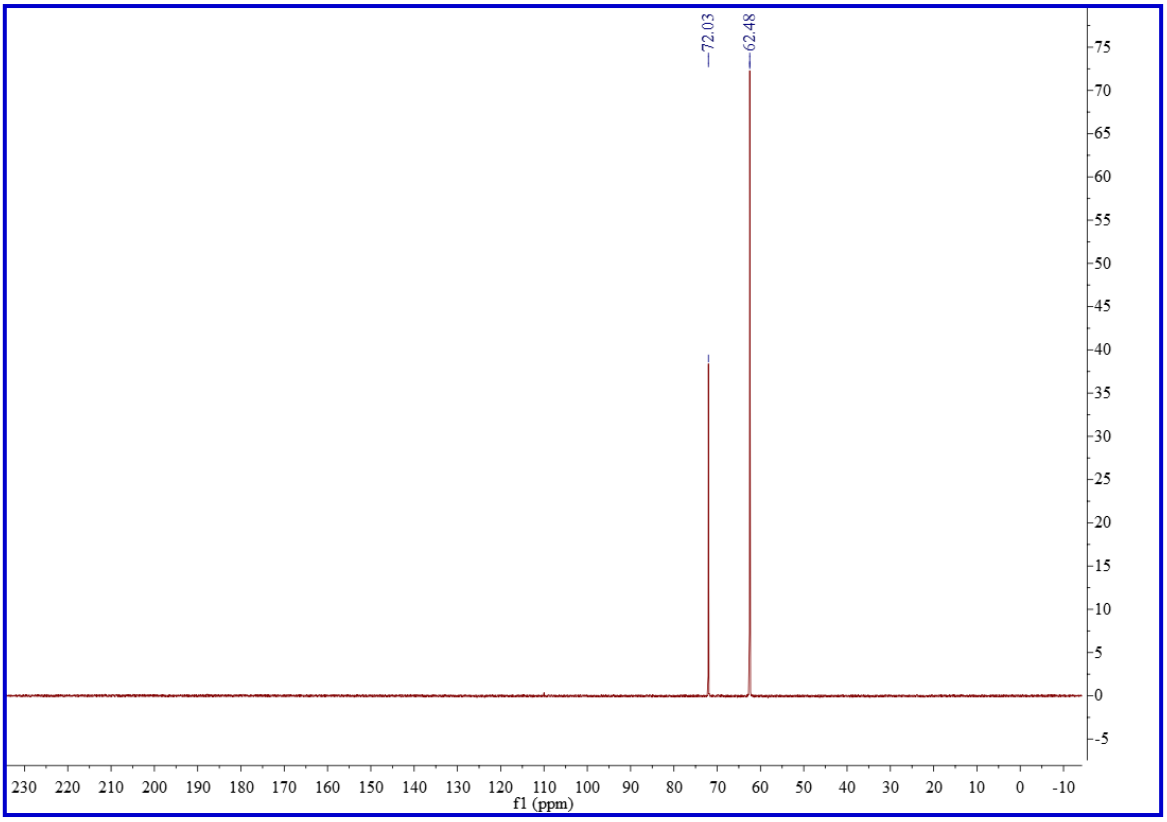

Figure S6:^{13}C NMR of Glycerol

Glycerol: ^{13}C NMR (125MHz, D_2O), δ 72.03 (C-2), 62.48 (C-1, C-3)

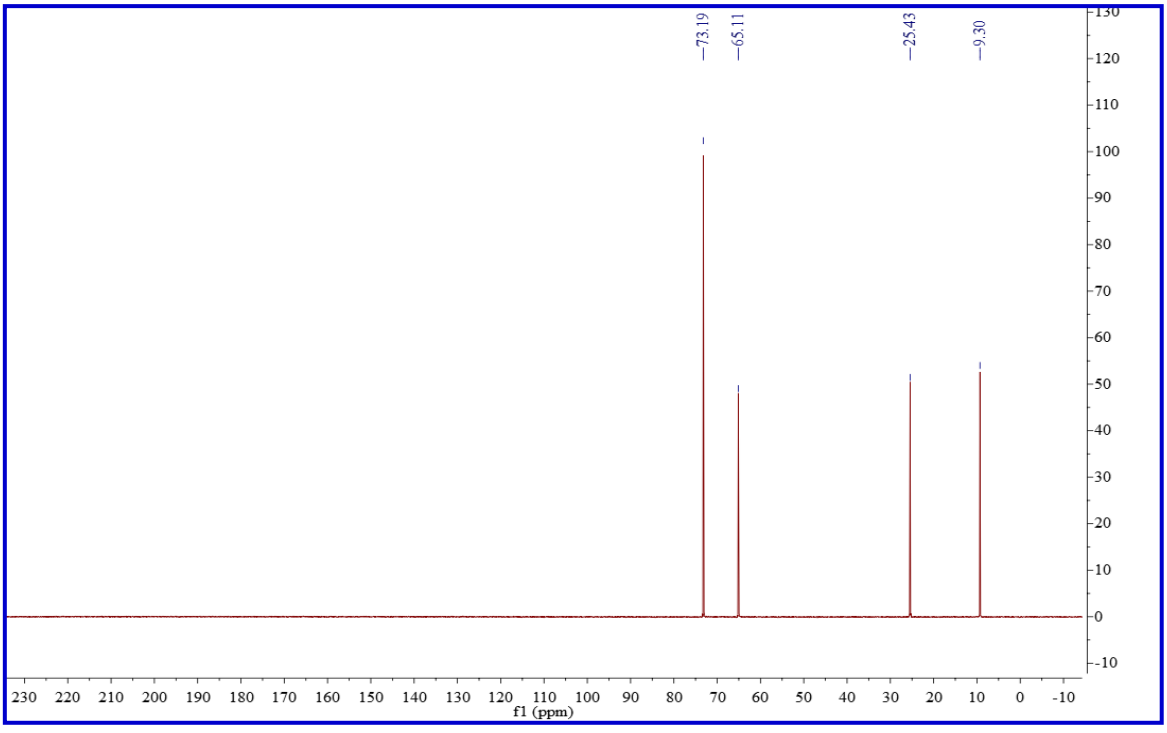

Figure S7:^{13}C NMR of 1, 2- Butanediol (BDO)

1, 2- Butanediol: ^{13}C NMR (125MHz, D_2O), δ 73.19 (C-2), 65.11 (C-1), 25.43 (C-3), 9.3 (C-4)

Reference

[1] C. R. Zhang, S. A. Aldosari, P .S. P. V. Vidyasaar, K. M. Nair, M. G. Nair. Agric. Food Chem. 2013, 61, 5834-5840.