A Continuous Flow Approach for the C–H Functionalization of 1,2,3-Triazoles in γ-Valerolactone as a Biomass-Derived Medium


Significance: A continuous-flow C–H functionalization and cyclization of 1,2,3-triazoles bearing haloaryl groups was carried out by using a coil reactor containing palladium on carbon catalyst (Pd/C) in γ-valerolactone (GVL), as a biomass-derived reaction medium, to give the corresponding cyclic compounds (eq. 1: ≤91% yield; eq. 2: ≤93% yield).

Comment: A long-term reaction of 4-[(2-iodophenoxy)methyl]-1-(4-methoxyphenyl)-1H-1,2,3-triazole in a coil reactor containing Pd/C for eight hours gave 24 g of the cyclized product (87% yield). MP-AES analysis of the reaction mixture showed that 0.0015% of the palladium species leached out during this long-term reaction.