

## Supporting information

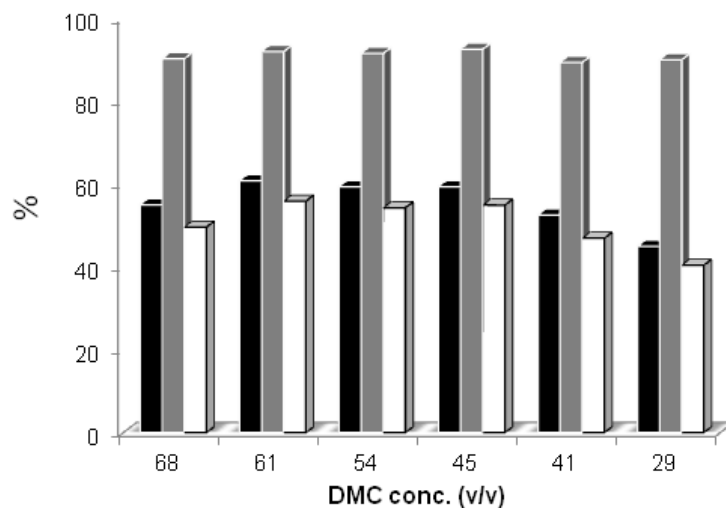


Figure S1. Effect of DMC content on the performance of CLEMPA biocatalyst (black square – glycerol conversion, white square – GlyC yield and grey square – selectivity in GlyC). Conditions for CLEMPA preparation: 1.2 mL/g lipase:MP<sub>2</sub>, 0.4 % w/v GA and 17 h cross-linking time. Conditions for GlyC synthesis: glycerol:DMC=1:10 molar ratio, 5 % CLEMPA, 60 °C and 6 h incubation time.

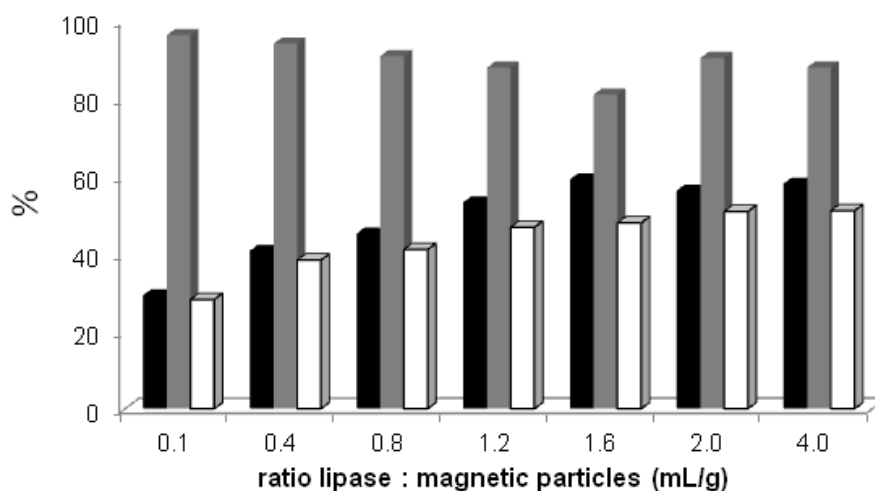


Figure S2. Influence of the lipase : magnetic particles ratio on the catalytic performance of CLEMPA biocatalyst (black square – glycerol conversion, white square – GlyC yield and grey square – selectivity in GlyC). Conditions for CLEMPA preparation: 45 % v/v DMC, 0.4 % w/v GA and 17 h cross-linking time. Conditions for GlyC synthesis: glycerol:DMC=1:10 molar ratio, 5 % CLEMPA, 60 °C and 6 h incubation time.

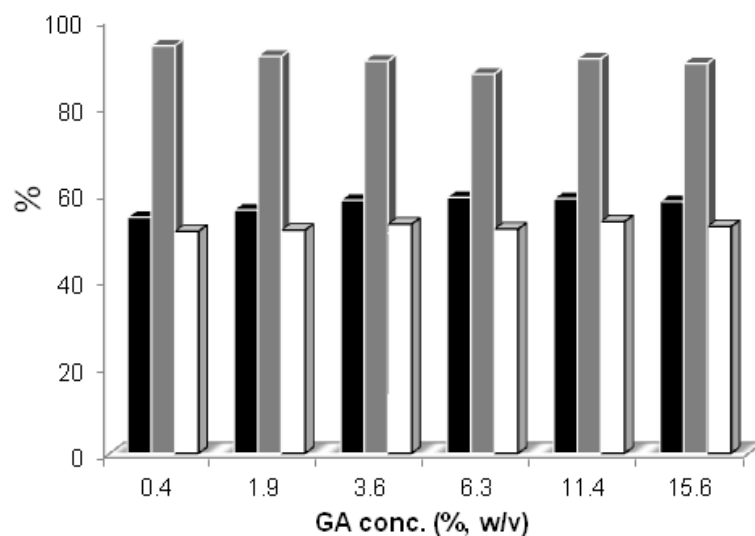


Figure S3. Cross-linker concentration affecting the performance of CLEMPA on GlyC synthesis (black square – glycerol conversion, white square – GlyC yield and grey square – selectivity in GlyC). Conditions for CLEMPA preparation: 1.2 mL/g lipase:MP<sub>2</sub>, 45 % v/v DMC and 17 h cross-linking time. Conditions for GlyC synthesis: glycerol:DMC=1:10 molar ratio, 5 % CLEMPA, 60 °C and 6 h incubation time.

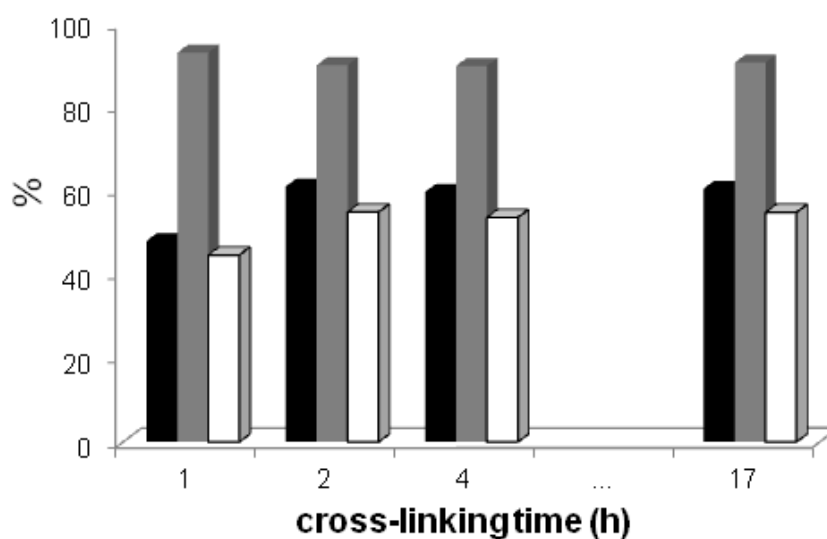


Figure S4. Variation of cross-linking time reflected on the catalytic capacity of CLEMPA biocatalyst (black square – glycerol conversion, white square – GlyC yield and grey square – selectivity in GlyC). Conditions for CLEMPA preparation: 1.2 mL/g lipase:MP<sub>2</sub>, 45 % v/v precipitation agent, 3.6 % w/v GA and 17 h cross-linking time. Conditions for GlyC synthesis: glycerol:DMC=1:10 molar ratio, 5 % CLEMPA, 60 °C and 6 h incubation.