# Supplementary information

## S1. Fabrication of monolith



Figure S1: Schematic representation of in situ monolith polymerization process



# S2. Functionalization of monolith

Figure S2: Schematic representation of functionalization process of thiol-ene monolith for enzyme immobilization

## S3. Galactose oxidase reaction



Figure S3: Schematic of the enzymatic turnover of galactose and the detection of the by-product  $H_2O_2$  via a second enzymatic reaction yielding a fluorescent molecule (left); Difference in fluorescence signal between unmodified monoliths and monoliths surface-modified with galactose oxidase (OSTE: off-stoichiometric thiol-ene).

#### S4. Reduction of different types of target DNA after chip treatment



Figure S4: Percentage of target DNA remaining after initial treatment with chip-based enzyme reactors as a function of the starting concentration. Data is normalized to the starting concentration of DNA set to 100%.