

SUPPLEMENTARY INFORMATION

Release of fluorescent species from agarose gels (5%) containing either 88 $\mu\text{g/ml}$ rabbit IgG-FITC or carboxyfluorescein (100 ng/ml) (sigma-aldrich, Switzerland). The experiments were performed by depositing 200 μl of gel on the bottom of a microwell, adding 1.8 ml of millipore water and measuring the fluorescence of the supernatant a fluorospectrometer (Nanodrop 3300, Thermo Scientific USA). at $\lambda = 510$ nm. Both dye and IgG were shown to diffuse out of the gel and the dye diffused at higher rate. For this experimental setup based on unidirectional diffusion and using a gel with a thickness of ~ 1 mm, equilibrium was reached after 1350 min in the case of rabbit IgG. Thus, assuming a bidirectional diffusion, we expect equilibrium to be reached within ~ 85 min for a 0.5 mm thick gel (a typical gel thickness for the sandwich assay presented here, see Figure 4b) and within ~ 340 min for a gel thickness of 1 mm (a typical gel thickness for the reverse assay presented here).

