



**Figure S5** Sensitivity analysis. Influence of a 10% increase in the values of six different parameters on the dynamic behaviour of a) receptor occupancy in the spleen ( $RO_{sp}$ ), and b) receptor occupancy in the central lung ( $RO_c$ ) was investigated. The following parameters were included in the analysis: the mucociliary clearance rate in the nose ( $k_{mcc,n}$ ), the diffusion coefficient ( $D$ ), the apparent permeability ( $P_{app}$ ), the clearance ( $CL$ ), the bronchial blood flow ( $Q_{bronch}$ ) and the solubility ( $C_s$ ).