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## **Homogenization of a reaction-diffusion system modeling carcinogens inside a human cell**

We use a reaction-diffusion model to describe the behavior of potentially cancer-causing chemicals inside a human cell. We show how periodic homogenization can be used to upscale rigorously the reaction-diffusion equations in the cytosol as well as on the surface of the endoplasmic reticulum. The resulting macromodel is also suitable for direct implementation. Results of numerical simulations will be shown.