*Characterization of Silica Nanocontainers*

After synthesis was completed, silica nanoparticles were precipitated (1 h at 14000 rpm) using a 320R centrifuge (Hettich, Germany). The supernatant was removed and analyzed to determine the Myramistin content, while the precipitate was redispersed in deionized water. The precipitation/redispersion procedure was repeated four times. Then the precipitate was divided into two portions. One portion was redispersed in freshly distilled ethanol, while second portion was lyophilized using Alpha 1_2 LD+ setup (Martin Christ Grfriertrocknungsanlagen GmbH, Germany). The obtained powder was used for analysis by FTIR spectroscopy and thermogravimetry and for Myramistin release study.

The content of Myramistin in supernatant was measured on an Evolution 300 double-beam UV-Vis spectrometer (Thermo Electron Corp., United States) at a wavelength of 263 nm using 1-cm quartz cells; a cell with deionized water was placed into the reference beam.

In order to remove the micellar template, concentrated hydrochloric acid (37 wt. %) was added to a dispersion of silica particles in ethanol (1 mL acid per 25 mL alcohol) and the mixture was exposed in the ultrasonic bath heated to 50°C for 1 h, and left at 4°C for 24 h. After that, the particles were washed with ethanol and deionized water by the above-described precipitation/redispersion procedure. The resulting MSNs were redispersed in deionized water.

The size and porous structure of these MSNs were determined with a Technai G2 F-20 S-Twin TMP high-resolution transmission electron microscope (FEI, Holland). For this purpose, a droplet of a colloidal solution was placed onto a formvar-coated copper grid, and then removed with filter paper.

The drug incorporation into $SiO_2$ nanocontainers was studied by FTIR spectroscopy with a Nicolet 380 instrument (Thermo Electron Corp., United States). The spectra were measured in the diffuse reflectance mode at wave number range of 400–4000 $cm^{-1}$, and a number of scans was equal to 64.

The amount of Myramistin encapsulated in a $SiO_2$ matrix was determined by thermogravimetry using TGA Q500 instrument (TA Instruments, United States) in a temperature range of 25–600 °C under argon flow at a heating rate of 10°C/min.

*Myramistin Desorption Study*

To study the kinetics of Myramistin desorption (release) the portion of the silica nanocontainers' powder was redispersed in deionized water or aqueous medium with pH ≈ 5. The concentration of these dispersions was equal to 0.9 mg $SiO_2$ $mL^{-1}$. After 1 h the MSNs were precipitated by centrifugation. The supernatant was removed and analyzed by UV-Vis spectroscopy to determine the Myramistin content, while the precipitate was redispersed in new

portion of deionized water or aqueous medium with the same pH value. This procedure was repeated several times.