

VER01 - Verity shells

Package contents: 2 vials with bead mixtures, VER01A (1.0 mL) and VER01B (1.0 mL). Each vial contains a mixture of both monodisperse hollow organosilica beads [1] at a concentration of 10^8 /mL and 380 nm green fluorescent beads at a concentration of 10^8 /mL.

Beads properties

Property	VER01A	VER01B	Method
Diameter (nm)	189 ± 2	374 ± 10	SAXS
Shell thickness (nm)	8.1 ± 0.5	6.4 ± 0.7	SAXS
Shell type	Porous	Porous	SAXS
Concentration (/mL)	10^8	10^8	FCM
Auto fluorescence	Not detectable	Not detectable	FCM
Additional marker	10^8 /mL 380 nm diameter green fluorescent beads	10^8 /mL 380 nm diameter green fluorescent beads	
Buoyancy	Neutral in DI water	Neutral in DI water	No detectable sedimentation in 1 month

Table 1. Beads properties. SAXS: Small angle X-ray scattering, FCM: flow cytometry (Apogee A60-Micro).

Caution: beads may fragment in ultrasound baths.

Data

Transmission electron microscopy

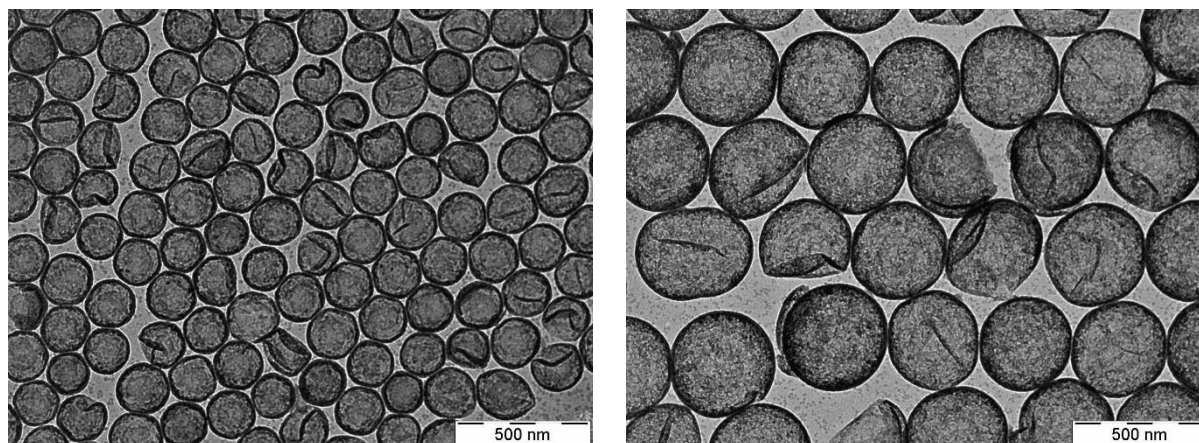


Figure 1: TEM image of 189 nm (left) and 374 nm (right) hollow organosilica beads. Image courtesy of Zoltan Varga, Biological Nanochemistry Research Group, Institute of Materials and Environmental Chemistry, Hungarian Academy of Sciences, Budapest, Hungary.

Flow cytometry

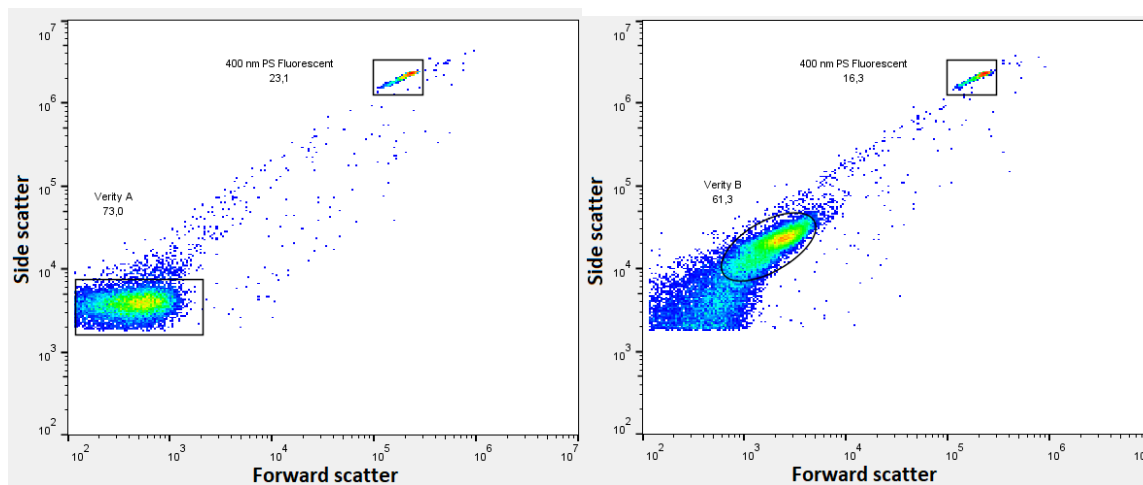


Figure 2: Flow cytometry scatter plots of 189 nm (left) and 384 nm (right) hollow organosilica beads.

References

1. Z. Varga, E. van der Pol, M. Pálmai, R. Garcia-Diez, C. Gollwitzer, J. Fraikin, A. Gasecka, N. Hajji, T.G. van Leeuwen, and R. Nieuwland *Hollow organosilica beads as reference particles for optical detection of extracellular vesicles*. *J. Thromb. Haemost.* 2018; **16**: 1646– 55.