

LBL-Shells® for Separation-Free Assays



Separation-free tests will challenge the market for in-vitro diagnostics. They answer the increasing need for simple assay formats and easy-to-use instrumentations.

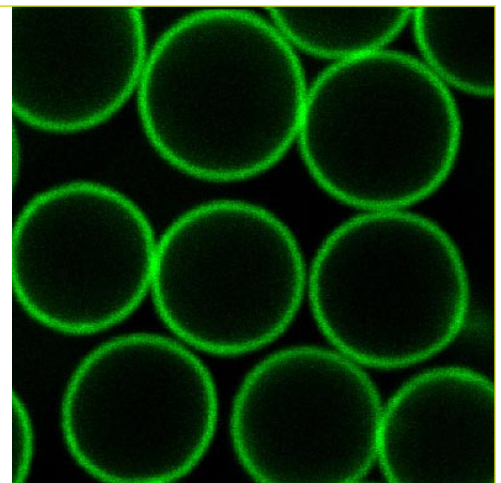
LBL-Shells® are the key to a new class of separation-free assays. They enable the development of new tests requiring fewer assay steps, low volumes, waste and costs. LBL-Shells® are hollow particles manufactured according to the LBL-Technology®. They are prepared as monodisperse particles with diameters between 200 nm and 5.000 nm.

LBL-Shells® provide the following benefits:



Hollow capsules with a diameter of 1 micron.

- LOW SEDIMENTATION RATE
- LOW LIGHT SCATTERING
- HIGH SENSITIVITY
- INTERIOR FUNCTIONS
- ANALYTE-SPECIFIC FUNCTIONS
- INCREASED SOLVENT STABILITY
- EASY RESUSPENSION
- MULTIPLE FLUORESCENCE CATEGORIES
- WIDE RANGES OF WAVELENGTHS
- HIGH STOKES SHIFT



Low sedimentation rate and low light scattering are provided by the light hollow, low refractive-index particle structure. In addition, an increased sensitivity is achieved by a high number of functional groups being added to the particle surface. They can also be embedded into or onto the capsule wall structure. Furthermore, additional interior functions can be embedded into the hollow particle core. Analyte-specific functions are provided by the reaction of analyte molecules with particle surface molecules resulting in the swelling or shrinking of the capsule and a subsequent signal change.

Increased solvent stability is provided by the resistance of the particles against organic or inorganic solvents. Due to the predefined high charge of the surface, the particles can be resuspended easily. Multiple fluorescence categories are achieved by the incorporation of different fluorescent dyes in the wall structure and/or in the particle core. Wide ranges of wavelengths are provided by the incorporation of single dyes or dye combinations with fluorescence wavelengths from 390 nm to 710 nm. Dye particles having high stokes shift can be produced.

LBL-Shells® can be engineered to individual assay formats by providing a high flexibility in:



- MATERIALS
- SIZE
- COLORS
- FUNCTIONS
- BIOCOMPATIBILITY

LBL-Shells® can be potentially used in agglutination assays, luminescent oxygen channelling assays, scintillation proximity assays, flow cytometric assays, microparticle counting assays, fluorometric microvolume assays, two-photon excitation assay, coincidence particle assays, immun-ochromatographic tests. In addition, LBL-Shells® can be used as a part of composite materials or composite assay formats.

LBL-Shells® are patent protected worldwide, thus providing several technological niches in specific separation-free assays formats.

Please feel free to contact us. We will engineer the right capsule for you.

