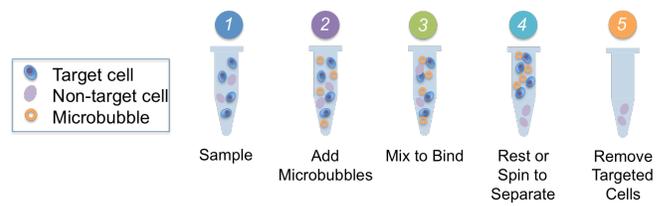


Microbubbles for Cell Sorting

Product Fact Sheet

Akadeum's microbubbles are high-buoyancy particles for use in targeting, capturing, and sorting cells, bacteria, viruses, or molecular analytes from common samples in the life sciences. Microbubbles are stocked at BRCF stores with streptavidin coating ready for conjugation to biotinylated antibodies or other biomolecules. Custom orders for specific cell markers are available directly from Akadeum.

General Cell Sorting Workflow



Key Features

High Buoyancy:

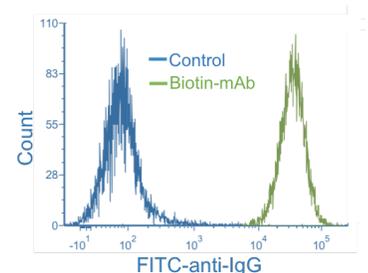
With a density of 0.6 g/cm^3 , Akadeum microbubbles rapidly lift target cells to the top of the sample (typically less than 10 minutes in a microcentrifuge tube, 15 minutes in a 15 mL conical tube).

Excellent Streptavidin Availability:

Microbubbles are functionalized with $\sim 200,000$ streptavidin sites per particle (0.17 nmol sites/mg of bubbles).

Easy Conjugation in Less than 45 Minutes:

Beads can be functionalized with biotinylated antibodies or other biomolecules. Binding efficiency can be confirmed with flow cytometry by staining with a fluorescent secondary antibody (example shown at right).



Separation Permits Positive Selection or Depletion:



Once conjugated, microbubbles bind specific cells and are gently and rapidly separated from complex samples. Microbubbles are compatible with common protein and nucleic acid isolation preps, fluorescent microscopy, and 'on bubble' $^1\text{H-NMR}$. They have been used successfully for depletion of both erythrocytes and leukocytes (e.g., CD45^+ , or CD14^+ cells) from peripheral blood mononuclear cells prior to flow cytometry. Shown at left are three microbubbles (autofluorescent, blue), one of which is engaged with a human lymphocyte (yellow; CD45^+).

Streptavidin Microbubble Details:

Streptavidin microbubbles (Catalog #SA01) are shipped as 4 mL of 5% w/v microbubbles (typically $3-5 \times 10^7$ microbubbles per mL) in PBS, 0.2% BSA, and 0.02% sodium azide. For many applications, 100 μ L of microbubbles are sufficient to capture 10^6 cells. Product should be stored at 4°C until use.

Currently Available Depletion Products:

Akadeum provides a portfolio of microbubbles for specific cell capture, isolation, and depletion. Currently available products include:

Species	Antigen	Typical Applications
Human	CD45	Lymphoid and myeloid cell depletion from PBMC prior to flow cytometry for circulating mesenchymal stem cells or other infrequent or rare cell types.
	CD14	Monocyte removal from mixed leukocyte populations prior to magnetic or flow cytometric sorting of lymphocyte subsets.
	CD235a	Removal of contaminating red blood cells without the need for chemical lysis.
	Annexin V	Capture of apoptotic (phosphatidyl serine expressing) blood or tissue cells.
Murine	CD45	Lymphoid and myeloid cell depletion from PBMC or tissue homogenates prior to flow cytometry. CD45.1 or CD45.2 specificity available on request.
	F4/80	Monocyte removal from mixed leukocyte populations prior to magnetic or flow cytometric sorting of lymphocyte subsets.
Bacterial	<i>Salmonella enterica</i>	Capture and concentration of <i>Salmonella</i> from food or industrial samples.
	<i>E. coli O157:H7</i>	Capture and concentration of pathogenic <i>E. coli</i> from food or industrial samples.

Pricing and For More Information:

Streptavidin Microbubbles, 4 mL

Catalog # SA01

Price: \$400

Other Depletion Microbubbles and Products

Contact Customer Support at info@akadeum.com or visit us at www.akadeum.com.