

CLEMENTE ASSOCIATES

Magnetic Beads & Separators / Nucleic Acid Isolation

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INFORMATION: PRODUCT APPLICATIONS

COMPATIBLE WITH F.I.S.H.

Clemente Magnetic particles do not interfere with Flow Cytometry and removal is not necessary. The Clemente particles do not fluoresce, denature, nor damage cells that are enriched for five-color F.I.S.H. analysis of Chromosomes 21, 18, 13, X, and Y.¹

¹College of Medicine, Baylor University, Houston, Texas. Pyrex © is a registered trademark of Corning Glass Works

FACS ANALYSIS

Figure 1 is a FACS analysis for T-cell enrichment using Clemente Magnetic 250nm particles. A pre-sorted T-cell level of 45% was enriched to 93%.

Because Clemente particles are small and have large surface areas, washing out excess antibody is not required. The small particles absorb the excess antibody. Competitive small magnetic particles <100nm lack a sufficient magnetic force of attraction to isolate targeted materials unassisted. They require ferromagnetic materials in direct contact with sample solutions (i.e., steel wool, wires, columns, etc.). These magnetic particles adhere to the columns or wires and not all are removed. The use of columns also requires volumes >250 µl.

Clemente Magnetics can perform magnetic isolations with a few µl of volume. The Clemente 50nm Separator can operate without wires or columns. Furthermore, specially designed reusable Pyrex flow cells or stationary test tubes allow the separation to occur on the wall of the container. In negative depletions the unwanted materials are captured on the walls of the flow cell, while the enriched material is captured in the effluent. In positive isolations the targeted materials are easily removed and concentrated from the walls of the flow cells. All of this is accomplished in a closed system.

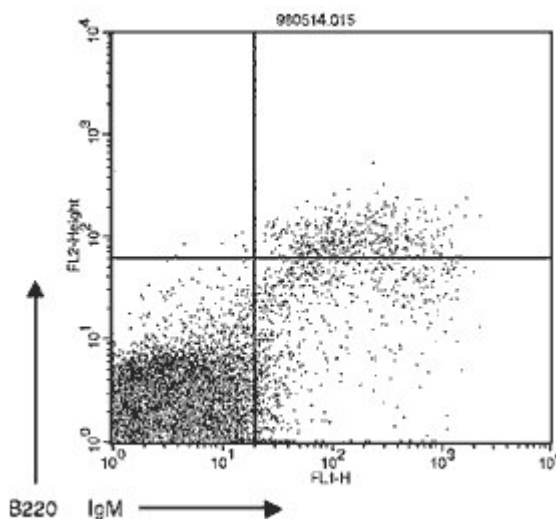


Fig. 1 - FACS Analysis for T-cell enrichment, courtesy of University of Maryland at Baltimore.

File: 980514

015 Acquisition Date: 14-May-98

Gate: lymphocytes

Gated Events: 41111

Total Events: 76260

Quad	Events	% Gated	% Total	X Mean	Y Mean
UL	18	0.04	0.02	13.82	101.84
UR	1033	2.51	1.35	249.48	105.97

LL	38319	93.21	50.25	4.12	2.48
LR	1741	4.23	2.26	178.13	20.97

POSITIVE ISOLATION OF B CELLS

At Cornell University's Medical College, Hospital for Special Surgery, Clemente Magnetics outperformed column-based magnetic system in terms of price and performance. 95% of the desired B-cells were positively isolated by Clemente Magnetics, while the column system isolated 70%. Purity levels for Clemente Magnetics were >90%, while the column purity levels were <90%. In comparing costs, Clemente Magnetics was 50% less than the column magnetic system.

DIAGNOSTIC P.S.A.

Streptavidin Magnetic Particles In a Diagnostic application for Prostate Specific Antigen (PSA), using the Clemente Streptavidin 250nm Protein coated Particle the following results were achieved:

Conditions:

100 µl of sample and 12 µg of magnetic particles, 15-minute incubation [sample + antibody], three 3-minute washes, 1-minute substrate incubation, 1-second measurements.

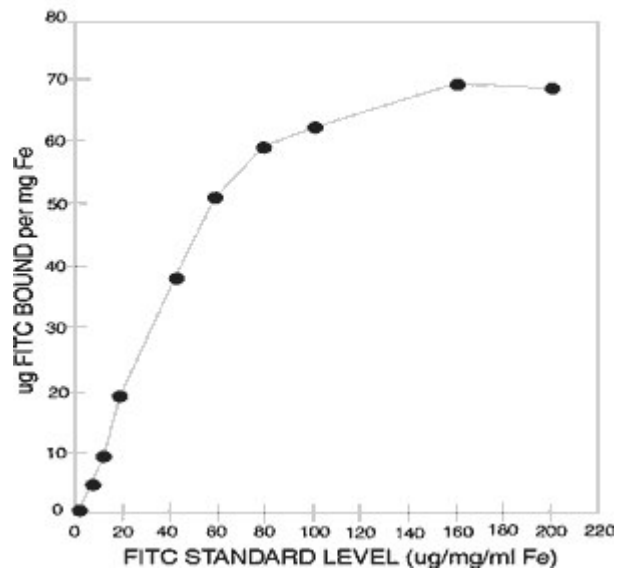


Fig. 2 - Bt BSA Binding Capacity of Streptavidin, Clemente Magnetics 250nm

PSA [ng/ml]	RLU/sec [Relative Luminescence Units]
0	1,365 [Background]
2	93,006
100	1.9 x 10 ⁶

ENRICHMENT OF MOUSE MOTONEURONS

Enrichment of Mouse Motoneurons During the purification procedure

Population	Yields/spinal cord	Islet ½ positive cells as a %of NF Positive Cells
Dissociated Cells	1-2 x 10 ⁶	4-4.5
Metrizamide Interface	1.5-1.7 x 10 ⁵	30-40
Metrizamide Pellet	2.6 x 10 ⁵	ND [not determined]
Negative fraction Clemente Magnetics	1.3 x 10 ⁵	ND
Positive Fraction Clemente Magnetics	1-1.5 x 10 ⁴	88.-97

Vilma Arce et. al. Inserm U 382 Marseille France

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