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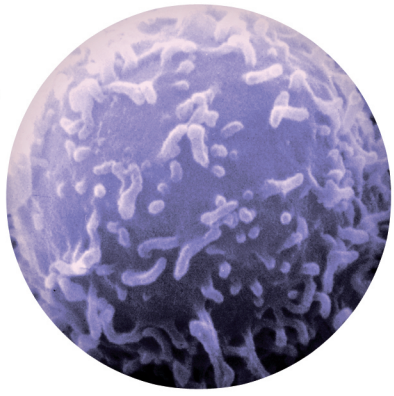
Human CD19 soluble biomarker in CNS



More accurate detection of leptomeningeal lymphoma.

PRINCIPLE

The kit is based on micro beads of known size and fluorescence that provide a method of capturing a human soluble CD19 (hsCD19) making it possible the detection using flow cytometry.

PROBLEM SOLVED

Dispite Flow Cytometry (FCM) is more sensitive than conventional cytology for identification of CNS disease in DLBCL and BL patients, due to the Characteristics of CSF samples (Poor cellularity; Low cell concentration; Limited sample volume; Low cell viability), limit the sensitivity of FCM (Fig. 1).

		Flow Cytometry Immunophenotyping (52%)	
		-	+
Cytology (14%)	-	* 31 (48%)	21 (33%)
	+	-	9 (14%)
	Susp.	-	3 (5%)

* It is necessary to increase sensitivity.

Fig. 1: Detection ELM-aggressive NHL: Patients with neurological symptoms (n = 64)

ADVANTAGES

1 Increased sensitivity, from a sensitivity of 52% at a sensitivity of 90% (Fig.2)

Patient group	CD19 ↓	CD19 ↓	CD19 ↑	CD19 ↑	TOTAL
CC-/FCM-/NS-	6	3	1#	0	10
CC-/FCM-/NS+	3	0	7	0	10
CC-/FCM+	0	1	1	8	10
CC+/FCM+	0	1	0	8	9
TOTAL	9	5	9	16	39

Fig.2 Association between the detection of sCD19 and leptomeningeal disease.
35/39 cases (90%) classified properly.
sCD19 cut-off > 1,19 ng/ml

2 Broad dynamic range of fluorescence detection via FCM and the capturing of sCD19 by beads enable the kit to measure the concentration of analyte in less time and using fewer samples dilutions compared to conventional ELISA.

3 Complete solution ranging from the preparation of the sample, until automatically obtaining a report containing the results of each patient. (Fig3)

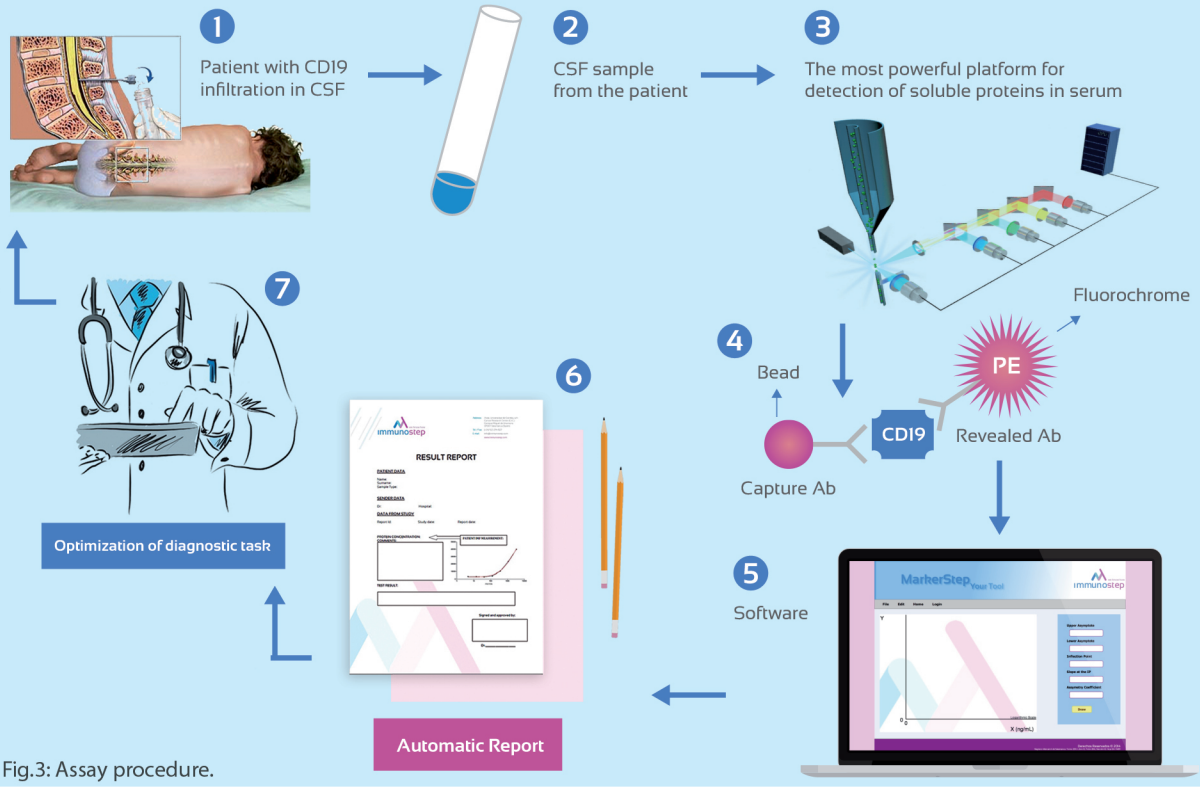
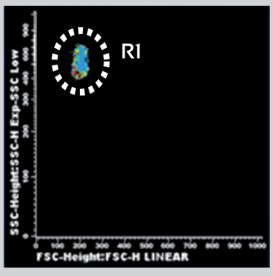


Fig.3: Assay procedure.

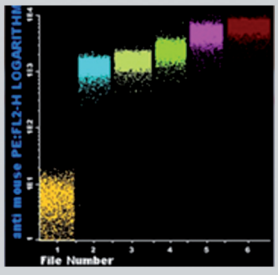
REAGENTS SUPPLIED WITH THE KIT

Reference	CD19-CNS-25T	CD19-CNS-50T
Contest of the kit	• CD19 Capture Beads - 1 vial • CD19 detection reagent - 1 vial • hCD19 recombinant protein Standard - 1 vial (lyophilized) • Wash Buffer – 1 bottle • Assay Buffer – 1 botte	
Software	Web /software tool for calculating the protein concentration automatically.	

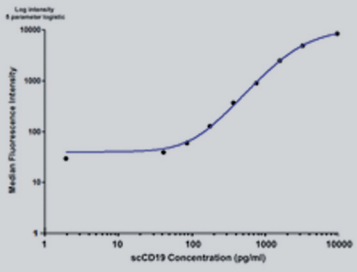
Images of the analysis:



Example of selection on the cytometer to store only the events in the R1 as image



Example of Dot plot population band for differents concentrations of sCD1



Example of 5 parameter logistic standard curve.

Required Apparatus	A flow cytometry equipped with a 488 nm laser capable of distinguishing 576 nm fluorescence.

REFERENCE

Muñiz C, Martín-Martín L, et al. Contribution of cerebrospinal fluid sCD19 levels to the detection of CNS lympoma and its impact on disease outcome. Blood. 2014 Mar 20;123(12).

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Address: Avda. Universidad de Coimbra, s/n
Cancer Research Center (C.I.C.)
Campus Miguel de Unamuno
37007 Salamanca (Spain)
Tel. / Fax: (+34) 923 294 827
E-mail: info@immunostep.com
www.immunostep.com