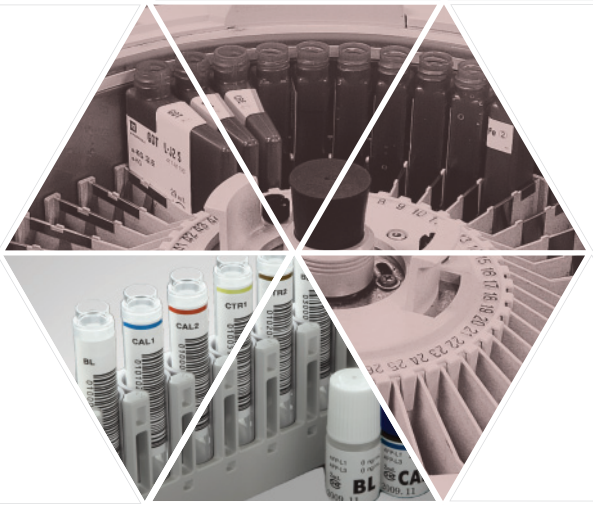
FUJIFILM
Value from Innovation

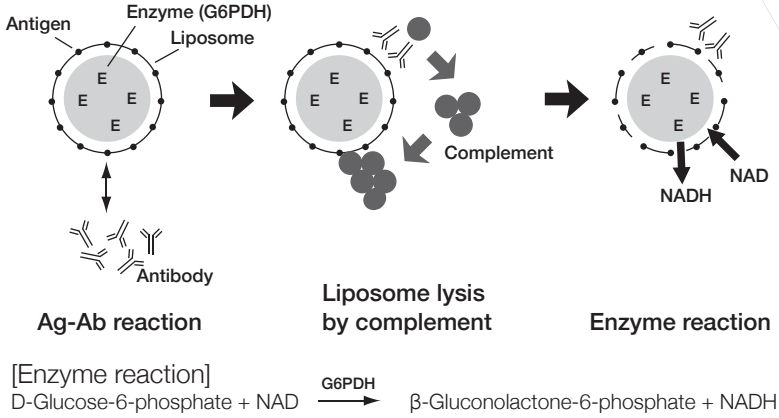
Wako

FOR IN VITRO DIAGNOSTIC USE

Total Complement Activity
CH50
Liposome Immunoassay



- **Fully automated assay**
- **Homogeneous reagent free from precipitation**
- **Stable reagent**
- **Good correlation with gold standard, Mayer's method**



[Enzyme reaction]
D-Glucose-6-phosphate + NAD $\xrightarrow{\text{G6PDH}}$ β-Gluconolactone-6-phosphate + NADH

One of the most widely used assays for total complement activity is based on complement-mediated hemolysis of antibody-sensitized erythrocytes (Mayer's method). This method requires serum dilutions to achieve 50% lysis of the indicator cells, making this method complicated and time consuming. In addition, due to the use of erythrocytes, the reagents are not stable and the assay is difficult to automate.

FUJIFILM Wako has developed an automated homogeneous liposome-based assay for total complement activity in human serum. The assay uses a homogeneous population of small-size liposomes (200nm), which gives stable dispersion. Glucose-6-phosphate dehydrogenase (G6PDH) is used as the entrapped enzyme which has optimal activity at a neutral pH. Using this liposomal technology, FUJIFILM Wako developed a fully automated assay system for total complement activity. The speed and ease of this assay makes it the best choice for your lab.

PERFORMANCE CHARACTERISTICS

Principle

When a sample is mixed with the reagent, complement in the sample is activated by the antigen-antibody complex on the liposomes. The activated complement breaks the membrane of the liposome. The enzyme glucose-6-phosphate dehydrogenase (G6PDH) contained in the liposome reacts with NAD and glucose-6-phosphate (G6P) in the reagent. During this enzyme reaction the NAD is reduced to NADH. As a result of this reduction, absorbance at 340 nm increases. The absorbance increase is proportional to the total complement activity (CH50) in the sample.

Accuracy

No.	Expected value (U/mL)	Obtained value (U/mL)	Recovery (%)
1	27.1	31.0	114.4
2	36.5	40.0	109.6
3	47.3	47.0	99.4
4	54.6	53.5	98.0

Precision

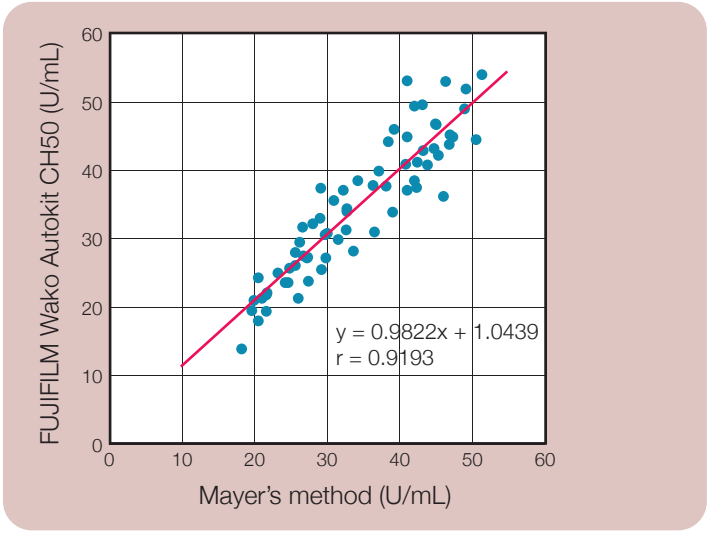
Within-run precision

Run #	Sample #	Replicates	Mean (U/mL)	SD	CV (%)
Run 1	1	21	49.5	0.5	1.10
Run 1	2	21	25.9	0.3	1.35
Run 2	1	21	46.2	0.5	1.14
Run 2	2	21	27.9	0.3	1.05

Total precision

	Number of assay days	Mean (U/mL)	SD	CV (%)	S_{WT}	S_T
High	21	48.3	1.57	3.2	18.9	22.1
Low	21	26.9	1.54	5.7	16.6	16.7

Correlation



Autokit CH50 shows good correlation with Mayer's method, which is one of widely used hemolytic assays and is considered as the standard method for complement activity assay.

Instruments

Various automated analyzer applications are available.

Catalog No.	Product Name	Pkg Size	Storage
995-40801	Autokit CH50		
	Liposome	2 x 20 mL	2-10°C
	Substrate	1 x for 20 mL	2-10°C
	Diluent	1 x 20 mL	2-10°C
997-43801	CH50 Calibrator	5 x for 0.5 mL	-10°C or lower
991-43701	Complement Control	2 x 10 x for 0.5 mL	-10°C or lower

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