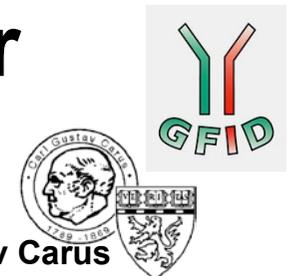


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High sensitive detection of double-stranded DNA autoantibodies by a modified *Crithidia luciliae* immunofluorescence test (CLIFT)

Karsten Conrad, Werner Schößler



Modified Crithidia luciliae immunofluorescence test (mCLIFT)

- 1. Introduction (dsDNA autoantibodies)**
- 2. mCLIFT and definite SLE (ACR)**
- 3. mCLIFT and anti-dsDNA-ELISA positive and negative non-SLE patients**
- 4. mCLIFT in routine screening**
- 5. Summary and conclusions**

dsDNA Autoantibodies

- **Diagnostic markers and ACR criterion of systemic lupus erythematosus (SLE)**
- **Associated with lupus nephritis**
- **Titer often correlate with disease activity**
- **Highly heterogeneous with respect to their avidity, immunoglobulin subclass composition, cross-reactivity and complement fixing activity.**

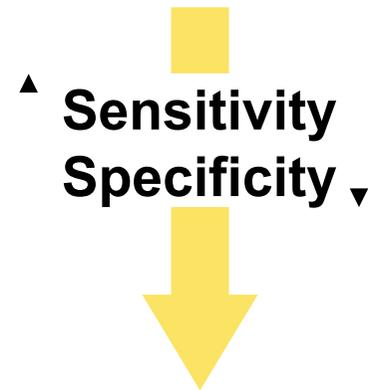
dsDNA Autoantibodies

- Diagnostic sensitivity and specificity depend on method used for dsDNA autoantibody determination:

- CLIFT

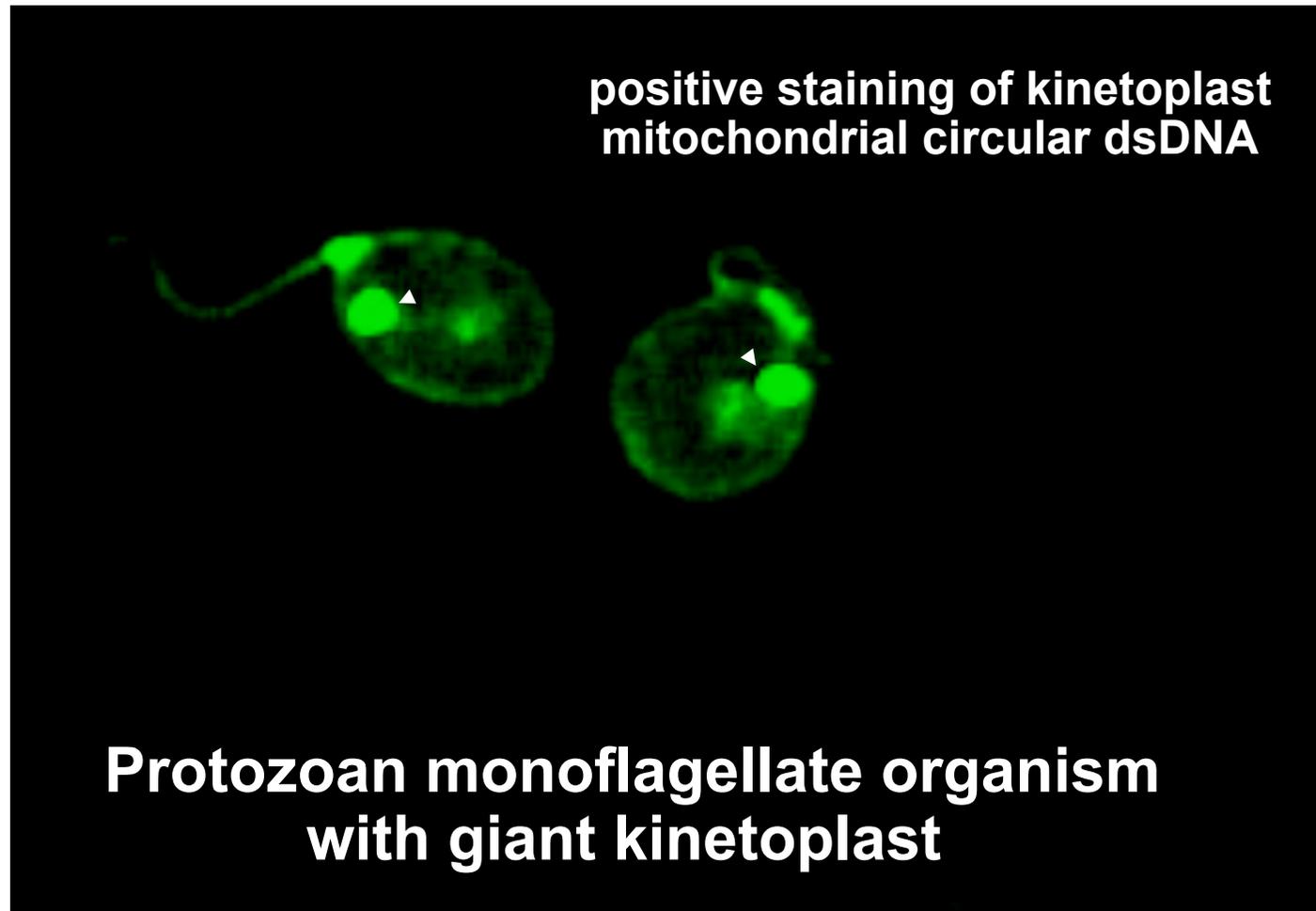
- FARR assay

- ELISA



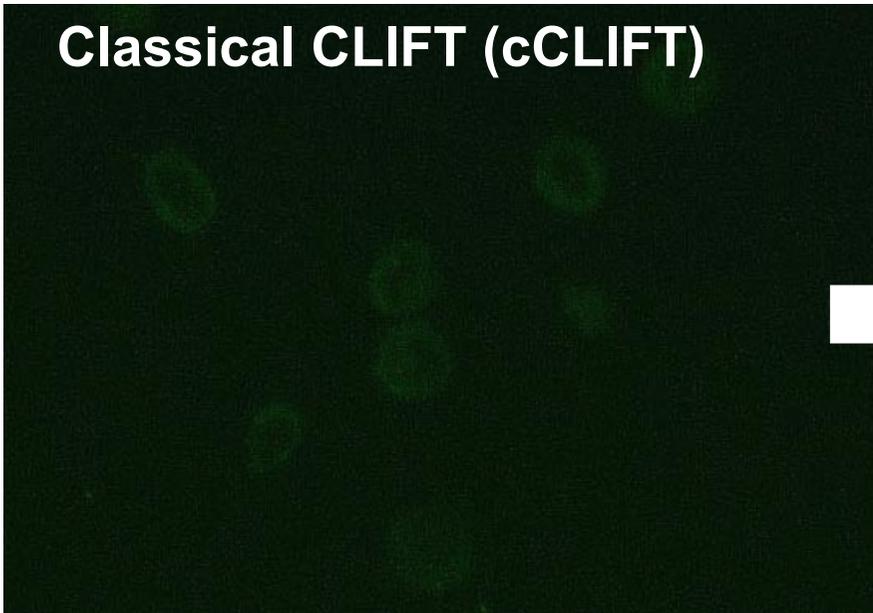
CLIFT

Crithida luciliae immunoflorescence test

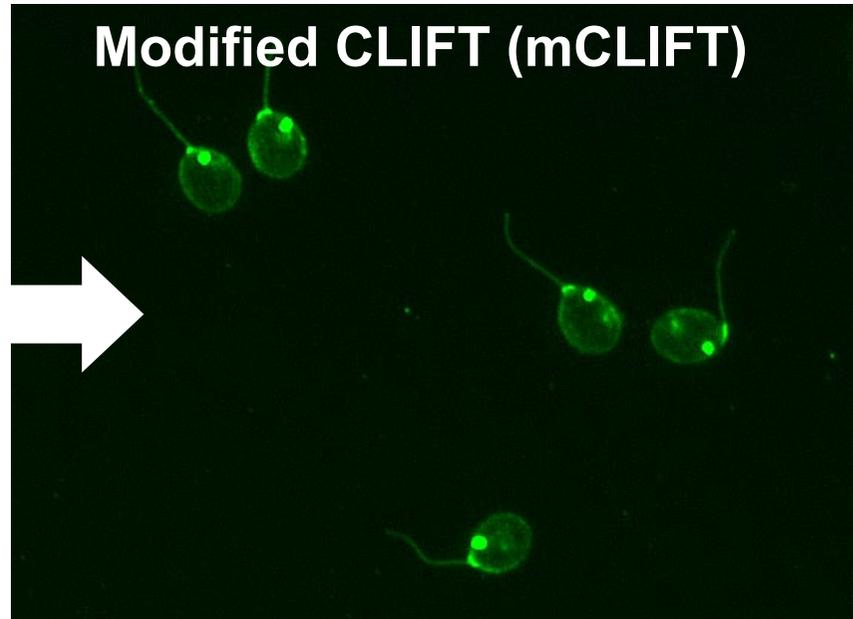


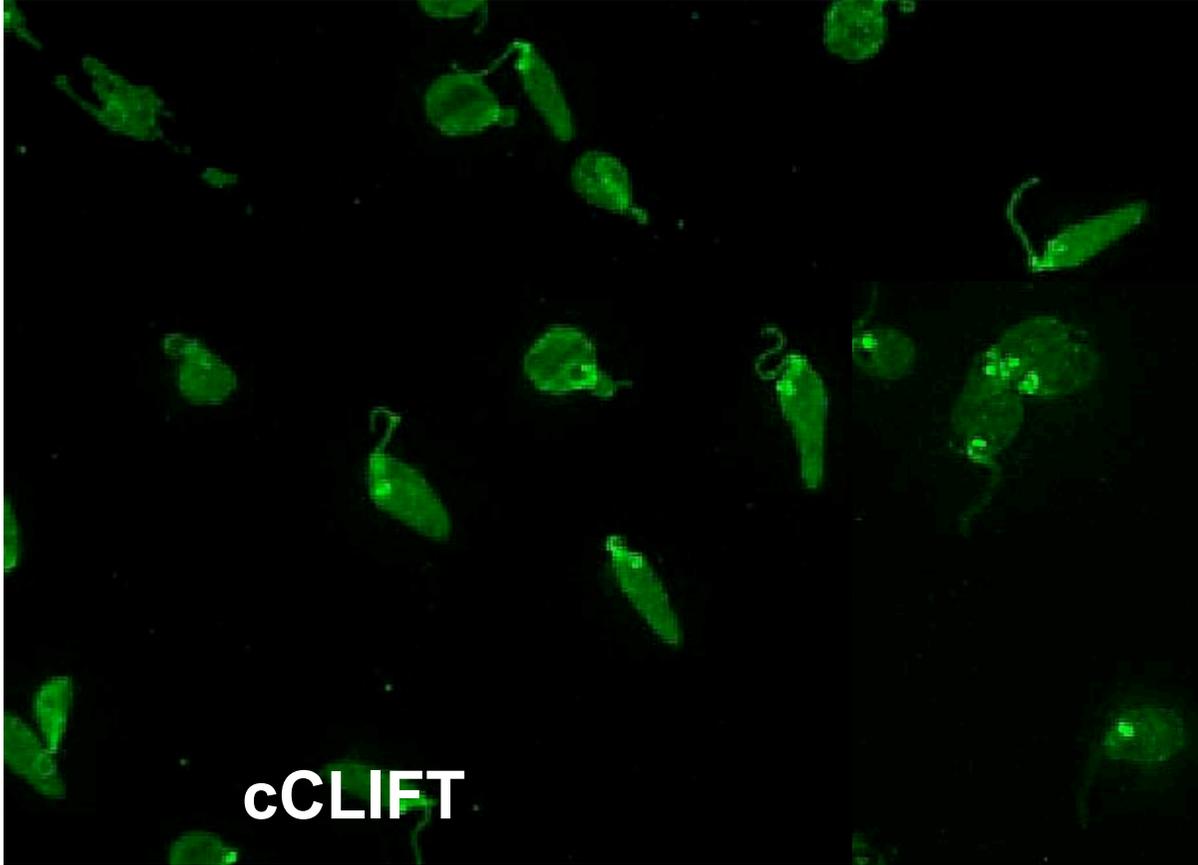
Modified CLIFT (mCLIFT)

Classical CLIFT (cCLIFT)

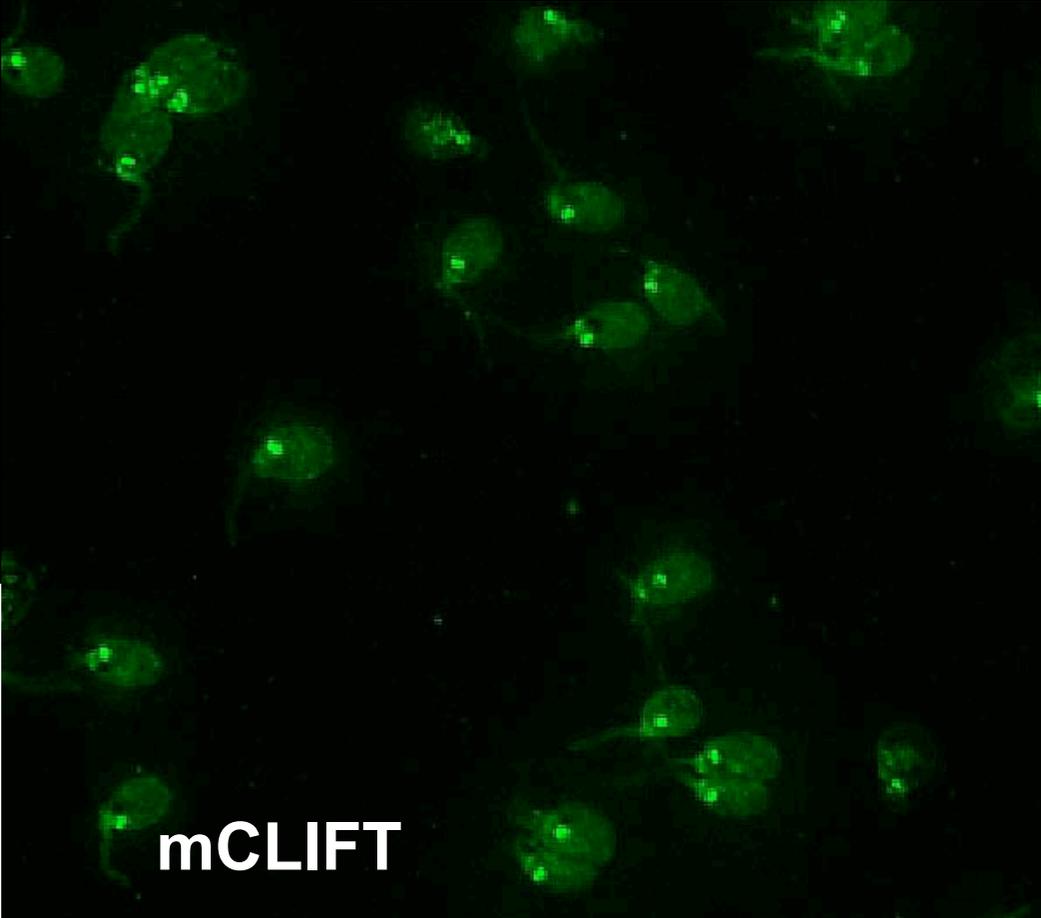


Modified CLIFT (mCLIFT)





cCLIFT



mCLIFT

mCLIFT results in anti-dsDNA autoantibody positive (ELISA or FARR) definite SLE

FARR assay	n.d.	n.d.	positive	
ELISA	positive	positive	positive	
cCLIFT	positive	negative	negative	
n	27	31	30	Study
mCLIFT	26 (96.3%)	20 (64.5%)		Dresden
			17 (56.7%)	Magdeburg

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mCLIFT results in anti-dsDNA ELISA positive non-SLE patients

30 patients without definite SLE
but positive anti-dsDNA ELISA

mCLIFT

24 negative ▲
(also cCLIFT neg)

▲ 6 positive
(4 also cCLIFT positive)

mCLIFT results in anti-dsDNA ELISA negative non-SLE patients

96 patients without definite SLE
and negative anti-dsDNA ELISA

mCLIFT

95 negative
(also cCLIFT neg)

1 positive
(cCLIFT negative,
but homogeneous pattern
on HEp-2 cells)

Comparison of the result obtained with conventional and modified CLIFT

		dsDNA AAB (EIA) pos. SLE (n = 58)		dsDNA AAB (EIA) pos. non- SLE (n = 30)		dsDNA AAB (EIA) neg. non- SLE (n = 96)		
		modified CLIFT		modified CLIFT		modified CLIFT		
		positive	negative	positive	negative	positive	negative	
conv. CLIFT	positive	26	1	4	0	0	0	
	negative	20	11	2	24	1	95	
		79.3%		20%		1.1%		mCLIFT + (%)

mCLIFT results in routine diagnostics

791 patients screened for ANA by IIF on HEp-2 cells

ANA	negative	positive	
		granular pattern	homogen. pattern
n	563	120	116
mCLIFT +	1	8	38
	0.2%	6.7%	32.8%

Summary & Conclusions

- 1.** Through modification of the assay buffer, a significant increase in sensitivity of the CLIFT while retaining the high specificity for SLE could be observed.
- 2.** Further investigation is required to check whether the mCLIFT positive non-SLE patients develop SLE.