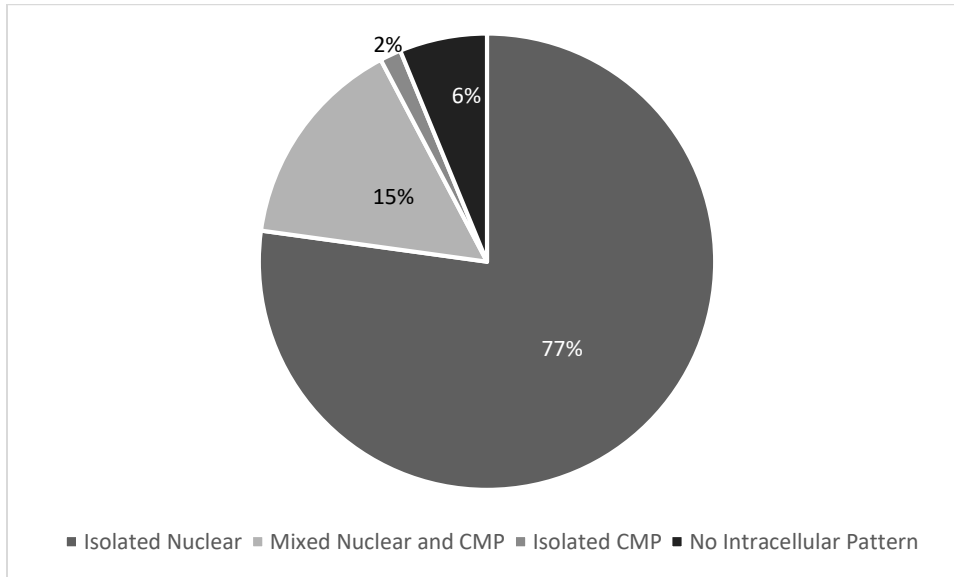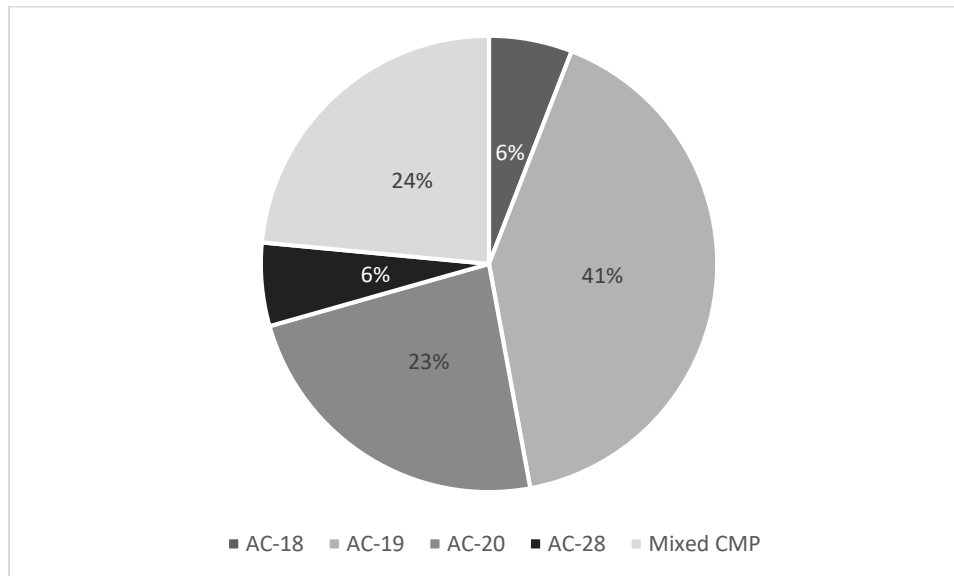**Supplemental Figure 1. Distribution of ANA patterns by immunofluorescence (IIF) on HEp-2000 cells.**

Abbreviations: CMP, cytoplasmic/mitotic pattern

Supplemental Figure 2. Distribution of cytoplasmic/mitotic patterns by immunofluorescence (IIF) on HEp-2000 cells.

Abbreviations: CMP, cytoplasmic/mitotic pattern; AC-18, cytoplasmic dots; AC-19, diffuse cytoplasmic; AC-20, cytoplasmic speckled; AC-28, chromosome coat protein.

Supplemental Table 1. Clinically defined samples

Demographic and Clinical Variables	Definition
Age	Years at diagnosis
Sex	Female or male
Post-secondary education	History of attendance at any time
Race/ethnicity	Asian: Chinese, Filipino, Japanese, Korean, others; African descendants: African, Caribbean; Hispanic: Hispanics only; Caucasian: North American, Indian – sub-continent, others; Other: Native North American, Native Hawaiian or other Pacific Islanders, others
Smoking status	Never smokers, current smoker, or former smokers, all mutually exclusive
High alcohol use	For females, high alcohol use was defined as more than 10 drinks a week and for males, more than 15 drinks a week (high-use or high-risk drinking based on current Canadian guidelines (49)).
Hypertension	Being on an anti-hypertensive medication or systolic blood pressure >140 or diastolic pressure >90

Presence of nephritis	Based on renal biopsy or fulfillment of the renal item of the ACR Classification criteria
Presence of proteinuria	≥3g per day
American College of Rheumatology (ACR) criteria	Number of specific ACR criteria fulfilled
SLE Disease Activity Index (SLEDAI-2K) score	Disease activity measured by global SLEDAI-2K score and its individual components grouped to represent the following organ systems: Neurological: seizures, psychosis, organic brain syndrome, visual disturbance, cranial nerve disorder, lupus headache, CVA Mucocutaneous: vasculitis, rash, alopecia, mucosal ulcers Musculoskeletal: arthritis, myositis Renal: urinary casts, hematuria, proteinuria, pyuria Serositis: pleurisy, pericarditis Constitutional: fever Immunological: low complement, increased DNA binding Hematological: thrombocytopenia, leukopenia

Medications	Any use of oral or parental glucocorticoids, high dose glucocorticoids (pulse or prednisone ≥40mg per day) antimalarials, immunosuppressive agents (methotrexate, azathioprine, mycophenolate, cyclophosphamide, cyclosporine, and biologics) at or prior to enrollment.

Supplemental Table 2. Univariable and multivariable analysis of demographic, clinical, and serologic profiles of anti-cellular antibody(ACA)-negative versus ANA-positive

	ACA- vs ANA +	
	Univariate model	**Multivariate model**
	Odds ratio	**Odds ratio**
	95% CI	**95% CI**
Age at diagnosis, year	1.03 (1.01, 1.05)*	1.02 (1, 1.04)*
Female, %	1.05 (0.47, 2.35)	
Post-secondary educ., % attended	1.59 (0.9, 2.84)	
Disease duration, years	0.65 (0.32, 1.32)	
Race/ethnicity, %		
Asian	0.15 (0.05, 0.47)*	
African descendants	0.39 (0.16, 0.99)*	
Hispanic	0.83 (0.2, 3.54)	
Caucasian	4.96 (2.58, 9.53)*	3.59 (1.8, 7.15)*
Other	0.28 (0.04, 2.08)	
Smoking status, %		
Current smoker	1.57 (0.85, 2.92)	
Former smoker	1.35 (0.76, 2.4)	
High alcohol use	1.03 (0.13, 7.88)	
Hypertension	0.87 (0.51, 1.47)	
Nephritis at enrollment, %	0.9 (0.51, 1.59)	

Proteinuria at enrollment, %	0.72 (0.17, 3.05)	
# ACR criteria, mean	0.89 (0.69, 1.14)	
SLEDAI-2K score, mean	0.94 (0.89, 1)*	
Neurological	1.03 (0.9, 1.18)	
Mucocutaneous	0.98 (0.85, 1.12)	
Musculoskeletal	0.98 (0.84, 1.14)	
Renal	0.91 (0.81, 1.01)	
Serositis	1.11 (0.71, 1.74)	
Constitutional	0.36 (0.05, 2.69)	
Immunological	0.82 (0.69, 0.96)*	
Hematological	0.4 (0.13, 1.25)	
Medications, % ever using		
Glucocorticoids	0.71 (0.41, 1.23)	
High doses of glucocorticoids	1.18 (0.73, 1.92)	2.41 (1.4, 4.15)*
Antimalarials	0.77 (0.46, 1.3)	
Immunosuppressants/biologics	0.41 (0.23, 0.71)*	0.35 (0.19, 0.65)*
Autoantibodies, %		
dsDNA	0.32 (0.15, 0.67)*	
PCNA	0.18 (0.02, 1.32)	
Ribosomal-P	0.31 (0.11, 0.86)*	
Ro52/TRIM21	0.48 (0.27, 0.86)*	
SSA/Ro60	0.32 (0.18, 0.57)*	0.41 (0.23, 0.73)*
SSB/La	0.32 (0.11, 0.88)*	

Sm	0.18 (0.07, 0.51)*	
U1-RNP	0.26 (0.13, 0.56)*	0.42 (0.19, 0.91)*
Lupus Anticoagulant	0.99 (0.53, 1.86)	
Anti-cardiolipin	0.87 (0.39, 1.95)	
Anti-ß2glycoprotein1	1.07 (0.53, 2.14)	

*Denotes an odds ratio that is statistically significant

Abbreviations: ACR, American College of Rheumatology; ANA, anti-nuclear antibody; dsDNA, double stranded DNA; IIF, indirect immunofluorescence; PCNA, proliferating cell nuclear antigen; RNP, ribonucleoprotein; SLE, systemic lupus erythematosus; SLEDAI, SLE disease activity index; Sm, Smith (U2-U6 RNP); SSA, Sjögren's syndrome antigen A; SSB, Sjögren's syndrome antigen B; TRIM 21, tripartite motif 21; yr, years.

Supplemental Table 3. Univariable and multivariable analysis of demographic, clinical, and serologic profiles of isolated CMP versus ANA-positive

	Isolated CMP vs ANA +	
	Univariate model **Odds ratio** **95% CI**	**Multivariate model** **Odds ratio** **95% CI**
Age at diagnosis, year	1.01 (0.97, 1.04)	
Female, %		
Post-secondary educ., % attended	0.23 (0.08, 0.66)*	0.25 (0.09, 0.73)*
Disease duration, years	0.34 (0.07, 1.59)	
Race/ethnicity, %		
Asian	0.44 (0.1, 1.94)	
African descendants	0.32 (0.04, 2.45)	
Hispanic		
Caucasian	2.95 (0.96, 9.11)	
Other	1.24 (0.16, 9.54)	
Smoking status, %		
Current smoker	1.3 (0.37, 4.61)	
Former smoker	1.25 (0.4, 3.9)	
High alcohol use		
Hypertension	2.95 (1.11, 7.83)*	3.14 (1.12, 8.77)*
Nephritis at enrollment, %	2.48 (0.92, 6.68)	
Proteinuria at enrollment, %	3.04 (0.67, 13.8)	

# ACR criteria, mean	0.92 (0.56, 1.49)
SLEDAI-2K score, mean	1 (0.91, 1.1)
Neurological	
Mucocutaneous	1.04 (0.82, 1.31)
Musculoskeletal	1.15 (0.89, 1.5)
Renal	1.03 (0.9, 1.18)
Serositis	
Constitutional	
Immunological	0.83 (0.6, 1.16)
Hematological	
Medications, % ever using	
Glucocorticoids	1.12 (0.32, 3.93)
High doses of glucocorticoids	1.95 (0.74, 5.15)
Antimalarials	0.39 (0.15, 1.02)
Immunosuppressants/biologics	1.84 (0.7, 4.88)
Autoantibodies, %	
dsDNA	0.54 (0.15, 1.89)
PCNA	1.68 (0.38, 7.49)
Ribosomal-P	0.69 (0.16, 3.06)
Ro52/TRIM21	0.55 (0.18, 1.69)
SSA/Ro60	0.46 (0.16, 1.33)
SSB/La	0.7 (0.16, 3.11)
Sm	0.41 (0.09, 1.79)

U1-RNP	0.28 (0.06, 1.22)
Lupus Anticoagulant	0.27 (0.04, 2.08)
Anti-cardiolipin	0.99 (0.22, 4.42)
Anti-ß2glycoprotein1	0.81 (0.18, 3.59)

*Denotes an odds ratio that is statistically significant

Abbreviations: ACR, American College of Rheumatology; ANA, anti-nuclear antibody; dsDNA, double stranded DNA; IIF, indirect immunofluorescence; PCNA, proliferating cell nuclear antigen; RNP, ribonucleoprotein; SLE, systemic lupus erythematosus; SLEDAI, SLE disease activity index; Sm, Smith (U2-U6 RNP); SSA, Sjögren's syndrome antigen A; SSB, Sjögren's syndrome antigen B; TRIM 21, tripartite motif 21; yr, years.

Supplemental Table 4. Univariable and multivariable analysis of demographic, clinical, and serologic profiles of isolated CMP versus anti-cellular antibody(ACA)-negative

	Isolated CMP vs ACA -	
	Univariate model **Odds ratio** **95% CI**	**Multivariate model** **Odds ratio** **95% CI**
Age at diagnosis, year	0.97 (0.93, 1.01)	
Female, %		
Post-secondary educ., % attended	0.14 (0.04, 0.47)*	0.13 (0.04, 0.46)*
Disease duration, years	0.54 (0.1, 2.86)	
Race/ethnicity, %		
Asian	3.02 (0.46, 19.7)	
African descendants	0.83 (0.09, 7.56)	
Hispanic		
Caucasian	0.6 (0.16, 2.17)	
Other	4.38 (0.26, 73.73)	
Smoking status, %		
Current smoker	0.82 (0.21, 3.3)	
Former smoker	0.92 (0.26, 3.25)	
High alcohol use		
Hypertension	3.4 (1.14, 10.14)*	4.13 (1.18, 14.48)*
Nephritis at enrollment, %	2.76 (0.9, 8.53)	
Proteinuria at enrollment, %	4.21 (0.55, 32.56)	

# ACR criteria, mean	1.04 (0.57, 1.9)
SLEDAI-2K score, mean	1.06 (0.95, 1.19)
Neurological	
Mucocutaneous	1.1 (0.77, 1.57)
Musculoskeletal	1.19 (0.88, 1.61)
Renal	1.13 (0.95, 1.34)
Serositis	
Constitutional	
Immunological	1.02 (0.71, 1.46)
Hematological	
Medications, % ever using	
Glucocorticoids	1.58 (0.41, 6.16)
High doses of glucocorticoids	1.65 (0.56, 4.81)
Antimalarials	0.51 (0.17, 1.48)
Immunosuppressants/biologics	4.54 (1.5, 13.76)*
Autoantibodies, %	
dsDNA	1.69 (0.4, 7.18)
PCNA	9.33 (0.79, 109.72)
Ribosomal-P	2.23 (0.37, 13.34)
Ro52/TRIM21	1.15 (0.33, 4.04)
SSA/Ro60	1.43 (0.44, 4.67)
SSB/La	2.23 (0.37, 13.34)
Sm	2.2 (0.37, 13.14)

U1-RNP	1.05 (0.2, 5.46)
Lupus Anticoagulant	0.27 (0.03, 2.29)
Anti-cardiolipin	1.14 (0.21, 6.11)
Anti-ß2glycoprotein1	0.76 (0.15, 3.86)

*Denotes an odds ratio that is statistically significant

Abbreviations: ACR, American College of Rheumatology; ANA, anti-nuclear antibody; dsDNA, double stranded DNA; IIF, indirect immunofluorescence; PCNA, proliferating cell nuclear antigen; RNP, ribonucleoprotein; SLE, systemic lupus erythematosus; SLEDAI, SLE disease activity index; Sm, Smith (U2-U6 RNP); SSA, Sjögren's syndrome antigen A; SSB, Sjögren's syndrome antigen B; TRIM 21, tripartite motif 21; yr, years.