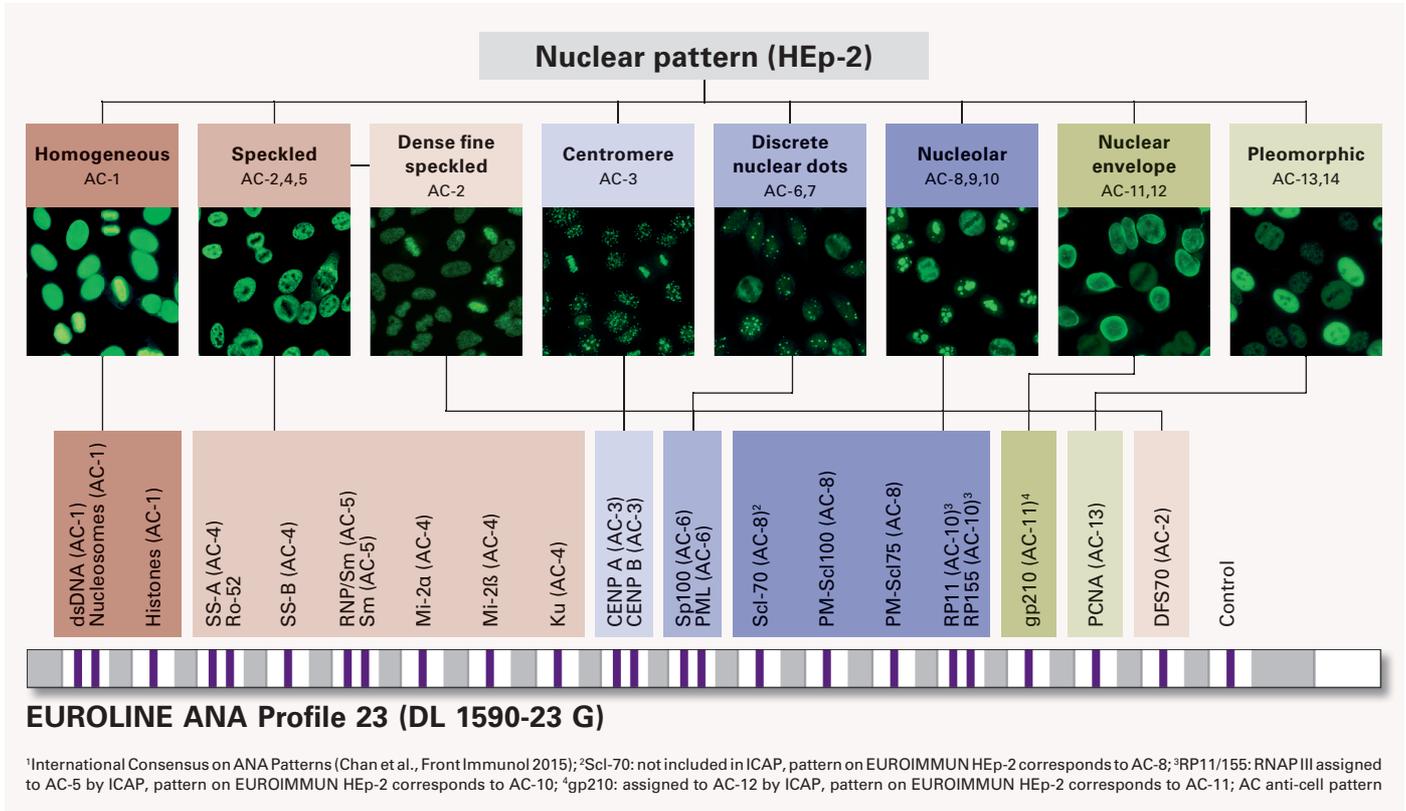




Multiplex approach for the confirmation and differentiation of all ANA patterns as per ICAP¹



Pattern (ICAP)	AC	Synonym	Antigen association	Disease association
Homogeneous	AC-1	Diffuse	dsDNA, nucleosomes, histones	SLE, drug-induced lupus, juvenile idiopathic arthritis
Speckled	AC-2,4,5	Granular	hnRNP, U1RNP, Sm, SS-A/Ro (Ro60), SS-B/La, RNA polymerase III, Mi-2, Ku	MCTD, SLE, SjS, DM, SSs/PM overlap
Dense fine speckled	AC-2	None	DFS70/LEDGF	Rare in SLE, SjS, SSs
Fine speckled	AC-4	Fine granular	SS-A/Ro (Ro60), SS-B/La, Mi-2, TIF1γ, TIF1β, Ku, RNA helicase A, replication protein A	SjS, SLE, DM, SSs/PM overlap
Large/coarse speckled	AC-5	Spliceosome/nuclear matrix	hnRNP, U1RNP, Sm, RNA polymerase III	MCTD, SLE, SSs
Centromere	AC-3	Kinetochore	CENP-A/B (C)	Limited cutaneous SSs, PBC
Discrete nuclear dots	AC-6,7			
Multiple nuclear dots	AC-6	6-20 nuclear dots, NSpl, PML bodies	Sp100, PML proteins, MJ/NXP-2	PBC, SARD, PM/DM
Few nuclear dots	AC-7	1-6 nuclear dots, Cajal bodies (coiled body)	p80-coilin, SMN	SjS, SLE, SSs, PM, asymptomatic individuals
Nucleolar	AC-8,9,10			
Nucleolar homogeneous	AC-8	None	PM/Scl-75, PM/Scl-100, Th/To, B23/nucleophosmin, nucleolin, No55/SC65	SSs, SSs/PM overlap
Nucleolar clumpy	AC-9	None	U3-snoRNP/fibrillarin	SSs
Nucleolar punctate	AC-10	Nucleolar speckled	RNA polymerase I, hUBF/NOR-90	SSs, SjS
Nuclear envelope	AC-11,12			
Smooth nuclear envelope	AC-11	Nuclear rim, nuclear membrane, membranous	Lamins A,B,C, or lamin-associated proteins	SLE, SjS, seronegative arthritis
Punctate nuclear envelope	AC-12	Nuclear membrane pores	Nuclear pore complex proteins (i.e., gp210)	PBC
Pleomorphic	AC-13,14			
PCNA-like	AC-13	None	PCNA	SLE, other conditions
CENP-F-like	AC-14	MSA-3, NSp-II	CENP-F	Cancer, other conditions

AC: anti-cell pattern, ANA pattern according to ICAP; DM: dermatomyositis; MCTD: mixed connective tissue disease (Sharp syndrome); PBC: primary-biliary liver cirrhosis; PM: polymyositis; SARD: sudden acquired retinal degeneration; SjS: Sjögren's syndrome; SLE: systemic lupus erythematosus; SSs: systemic sclerosis