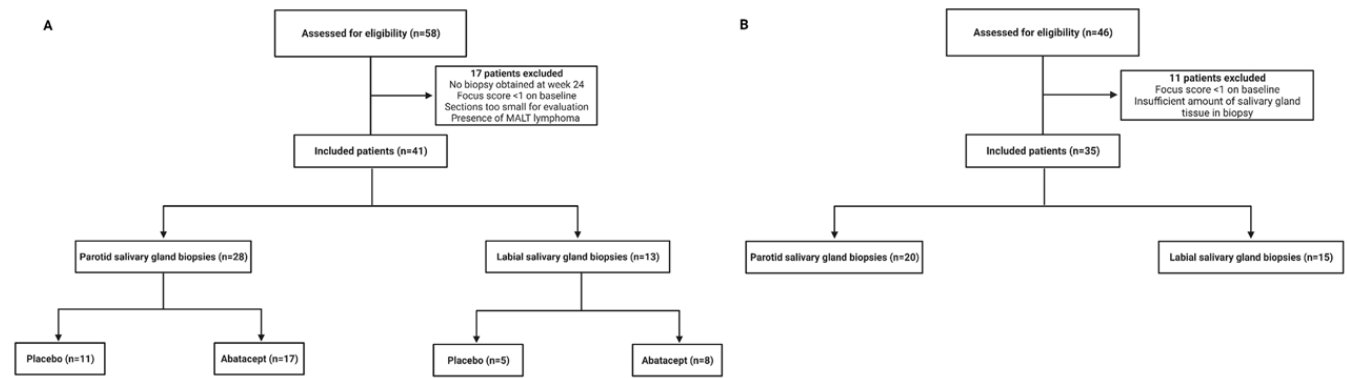




Supplementary Fig. S1. Flowchart of patient selection for the effect of abatacept on salivary gland biopsies of SjD patients (A) and the role of salivary gland biopsies to predict treatment response (B).

Supplementary Table S1. Primary antibodies used for immunohistochemistry.

Antigen	Clone	Host	Company
CD3	2GV6	Rabbit	Ventana Roche
CD20	L-26	Mouse	Ventana Roche
CD21	2G9	Mouse	Ventana Roche
CD45	2B11 + PD7/26	Mouse	Ventana Roche
CK8/18	B22.1 + B23.1	Mouse	Ventana Roche
Bcl-6	GI19E1/A8	Mouse	Ventana Roche
IgA/IgG	Polyclonal	Rabbit	Ventana Roche
IgA	Polyclonal	Rabbit	Ventana Roche
IgG	Polyclonal	Rabbit	Ventana Roche
IgM	Polyclonal	Rabbit	Ventana Roche

Supplementary Table S2. Histopathological and immunohistochemical data of parotid and labial salivary gland biopsies of SjD patients at baseline.

	Parotid salivary gland			Labial salivary gland		
	Placebo (n=11)	Abatacept (n=17)	p-value	Placebo (n=5)	Abatacept (n=8)	p-value
Focus score	1.8 (1.6-3.4)	4.3 (1.6-7.6)	0.11	2.0 (1.4-2.3)	2.0 (1.7-4.6)	1.00
LELs/mm ²	0 (0-0.13)	0.27 (0-0.53)	0.09	0 (0-0.18)	0 (0-0.28)	0.94
LEL ⁺ patients, n(%) [*]	5 (45.5)	10 (58.8)	0.70	2 (40.0)	2 (25.0)	0.70
FDC-networks/mm ²	0.23 (0-0.49)	0.41 (0-0.57)	0.78	0.22 (0.07-0.86)	0.38 (0.04-0.67)	1.00
FDC-network ⁺ patients, n(%) [*]	8 (72.7)	10 (58.8)	0.69	4 (80.0)	6 (75.0)	0.69
GCs/mm ²	0.11 (0-0.33)	0 (0-0.29)	0.35	0 (0-0.10)	0 (0-0.09)	1.00
GC ⁺ patients, n(%) [*]	6 (54.5)	5 (29.4)	0.25	1 (20.0)	2 (25.0)	0.25
CD3 ⁺ cells/mm ²	1212 (464-1904)	666 (277-1211)	0.33	528 (396-1054)	1317 (404-2088)	0.35
CD20 ⁺ cells/mm ²	596 (232-1285)	691 (193-1855)	0.71	327 (166-839)	1178 (249-1702)	0.17
CD3/CD20 segregation, n(%) [*]	8 (72.7)	8 (47.1)	0.25	2 (40.0)	6 (75.0)	0.25
CD45 ⁺ cells (%)	17.1 (14.0-25.8)	19.8 (5.5-36.5)	0.85	17.0 (11.8-34.4)	35.7 (13.2-44.2)	0.44
IgA/IgG plasma cell shift, n(%) [*]	7 (63.6)	10 (58.8)	1.00	3 (60.0)	8 (100.0)	1.00
IgA plasma cells/mm ²	326 (130-499)	110 (56-304)	0.15	1655 (998-2168)	611 (316-1166)	0.07
IgG plasma cells/mm ²	205 (74-457)	97 (28-316)	0.35	692 (362-898)	550 (259-1025)	0.72
IgM plasma cells/mm ²	49 (12-106)	11 (3-43)	0.20	566 (301-1445)	619 (242-804)	0.94

Supplementary Table S3. Histopathological and immunohistochemical data of parotid and labial salivary gland biopsies of CRESS responders and non-responders at baseline.

	Parotid salivary gland biopsies			Labial salivary gland biopsies		
	CRESS responder (n=13)	CRESS non-responder (n=8)	<i>p</i> -value	CRESS responder (n=9)	CRESS non-responder (n=6)	<i>p</i> -value
Focus score	3.3 (1.6-8.7)	4.7 (1.9-5.2)	0.86	2.0 (1.4-2.6)	1.9 (5.0)	0.69
LELs/mm ²	0.17 (0-0.33)	0.40 (0-0.56)	0.41	0 (0-0)	0 (0-0.38)	0.46
FDC networks/mm ²	0.43 (0-0.74)	0.26 (0-0.86)	0.86	0.16 (0-0.28)	0.32 (0-0.82)	0.33
GCs/mm ²	0 (0-0.33)	0 (0-0.38)	0.92	0 (0-0.03)	0 (0-0.03)	0.86
CD3 ⁺ cells/mm ²	433 (192-1704)	689 (455-3194)	0.34	428 (234-1160)	1182 (310-2266)	0.33
CD20 ⁺ cells/mm ²	360 (119-2655)	956 (262-1575)	0.80	279 (167-777)	781 (227-1446)	0.33
CD3/CD20 segregation, n(%)*	6 (46.2)	4 (50.0)	1.00	8 (88.9)	3 (50.0)	0.24
CD45 ⁺ cells (%)	10.0 (4.4-48.6)	20.0 (5.9-51.3)	0.97	13.2 (8.5-32.7)	24.4 (13.0-40.8)	0.33
IgA/IgG plasma cell shift, n(%)*	6 (46.2)	6 (75.0)	0.37	7 (77.8)	6 (100.0)	0.34
IgA plasma cells/mm ²	122 (64-404)	122 (54-769)	0.97	799 (515-1182)	488 (325-778)	0.30
IgG plasma cells/mm ²	138 (28-384)	93 (20-287)	0.80	832 (272-1042)	228 (134-804)	0.24
IgM plasma cells/mm ²	11 (5-43)	24 (2.3-83.3)	0.70	155 (57-564)	382 (135-730)	0.46