

## Additional files 2a-g

Sensitivity analyses showing cross-sectional associations between Tenascin-C levels and SLE activity in various organ domains according to SLEDAI-2K and BILAG-2004 indices at inception visit.

# SLEDAI-2K

**Additional file 2a** Association of serum levels of Tenascin with the presence of clinical features according to the SLEDAI. Reference category are all patients without involvement in the respective organ domain.

Parameter	Univariate analyses		Age and sex adjusted analyses		N of patients
	$\beta^{**}$ (95% IS)	p-value	$\beta^{**}$ (95% IS)	p-value	
<b>Any clinical features (Yes vs. No)</b>	<b>107.8 (8.1; 207.4)</b>	<b>0.035</b>	<b>108.4 (3.6; 213.3)</b>	<b>0.043</b>	26 vs.32
Neuropsychiatric clinical features* (Yes vs. No)	-211.9 (-488.9; 65.2)	0.131	-202.5 (-485.8; 80.8)	0.158	2 vs. 56
Vasculitis* (Yes vs. No)	-	-	-	-	0 vs. 58
Arthritis* (Yes vs. No)	48.3 (-87.7; 184.2)	0.480	46.0 (-94.4; 186.4)	0.514	10 vs. 48
Myositis* (Yes vs. No)	-	-	-	-	0 vs.58
Renal features * (Yes vs. No)	<b>265.2 (133.5; 396.9)</b>	<b>&lt; 0.001</b>	<b>269.7 (135.9; 403.5)</b>	<b>&lt; 0.001</b>	8 vs.50
Rash* (Yes vs. No)	-2.1 (-144.6; 140.4)	0.977	-9.1 (-154.9; 136.6)	0.901	9 vs.49
Alopecia * (Yes vs. No)	-84.6 (-267.0; 97.8)	0.357	-85.0 (-270.7; 100.7)	0.363	5 vs.53
Mucosal ulcers * (Yes vs. No)	-	-	-	-	0 vs.58
Serositis* (Yes vs. No)	231.1 (-160.4; 622.6)	0.242	216.6 (-187.5; 620.7)	0.287	1 vs.57
Hematological features * (Yes vs. No)	20.4 (-212.5; 253.3)	0.861	9.1 (-231.3; 249.5)	0.940	3 vs.55
Fever* (Yes vs. No)	-	-	-	-	0 vs.58

\* according to SLEDAI definitions (renal, hematological, serositis and neuropsychiatric SLEDAI features were merged into one item - see definitions). \*\*The regression coefficient  $\beta$  corresponds to the difference in TNC levels between groups (when assessing categorical variables) or to the change in TNC associated with a 1 unit increase in the assessed variable (when assessing continuous variables). (N=58, 1 patient had incomplete SLEDAI questionnaire).

**Additional file 2b** Association of serum levels of Tenascin with the presence of clinical features acc. to the SLEDAI. Reference category are all patients with clinical SLEDAI=0.

Parameter	Univariate analyses		Age and sex adjusted analyses		N of patients
	$\beta^{**}$ (95% IS)	p-value	$\beta^{**}$ (95% IS)	p-value	
<i>No clinical features acc. to SLEDAI</i>	<i>reference category</i>		<i>reference category</i>		32
<b>Any clinical features</b>	<b>107.8 (8.1; 207.4)</b>	<b>0.035</b>	<b>108.4 (3.6; 213.3)</b>	<b>0.043</b>	26 vs. 32
Neuropsychiatric clinical features*	-156.3 (-356.4; 43.8)	0.122	-146.3 (-344.6; 52.0)	0.142	2 vs. 32
Vasculitis	-	-	-	-	0 vs. 32
Arthritis	88.3 (-16.7; 193.2)	0.097	104.5 (-3.3; 212.3)	0.057	10 vs. 32
Myositis	-	-	-	-	0 vs. 32
Renal features *	<b>276.9 (157.5; 396.4)</b>	<b>&lt; 0.001</b>	<b>289.1 (168.2; 409.9)</b>	<b>&lt; 0.001</b>	8 vs. 32
Rash	46.6 (-73.7; 166.8)	0.438	40.9 (-83.6; 165.5)	0.510	9 vs. 32
Alopecia	-29.0 (-164.0; 106.0)	0.665	-12.8 (-147.8; 122.2)	0.848	5 vs. 32
Mucosal ulcers	-	-	-	-	0 vs. 32
Serositis	275.4 (-2.2; 553.0)	0.052	<b>298.6 (15.2; 582.0)</b>	<b>0.040</b>	1 vs. 32
Hematological features *	67.7 (-96.4; 231.8)	0.407	90.7 (-77.5; 259.0)	0.280	3 vs. 32
Fever	-	-	-	-	0 vs. 32

\* according to SLEDAI definitions (renal, hematological, serositis and neuropsychiatric SLEDAI features were merged into one item - see definitions). \*\*The regression coefficient  $\beta$  corresponds to the difference in TNC levels between groups (when assessing categorical variables) or to the change in TNC associated with a 1 unit increase in the assessed variable (when assessing continuous variables). (N=58, 1 patient had incomplete SLEDAI questionnaire).

**Additional file 2c** Association of serum levels of Tenascin with the presence of clinical features acc. to the SLEDAI . Reference category are all patients with SLEDAI=0.

Parameter	Univariate analyses		Age and sex adjusted analyses		N of patients
	$\beta^{**}$ (95% IS)	p-value	$\beta^{**}$ (95% IS)	p-value	
No SLEDAI symptoms	reference category		reference category		17
Any clinical features	108,7 (-16,8; 234,3)	0,088	105,8 (-30,1; 241,8)	0,123	26 vs. 17
Neuropsychiatric clinical features*	-155.3 (-335.3; 24.7)	0.086	-156.2 (-344.6; 32.2)	0.098	2 vs. 17
Vasculitis	-	-	-	-	0 vs. 17
Arthritis	89.2 (-22.3; 200.7)	0.112	102.0 (-20.5; 224.5)	0.098	10 vs. 17
Myositis	-	-	-	-	0 vs. 17
<b>Renal</b>	<b>277.9 (148.9; 406.9)</b>	<b>&lt; 0.001</b>	<b>281.1 (142.1; 420.1)</b>	<b>&lt; 0.001</b>	8 vs. 17
Rash	47.5 (-87.9; 182.9)	0.476	43.4 (-106.4; 193.2)	0.554	9 vs. 17
Alopecia	-28.1 (-160.0; 103.8)	0.662	-13.5 (-154.0; 127.0)	0.843	5 vs. 17
Mucosal ulcers	-	-	-	-	0 vs. 17
<b>Serositis</b>	<b>276.4 (34.3; 518.4)</b>	<b>0.028</b>	<b>312.7 (38.0; 587.4)</b>	<b>0.029</b>	1 vs. 17
Hematological	68.6 (-79.8; 217.0)	0.344	101.1 (-66.1; 268.3)	0.218	3 vs. 17
Fever	-	-	-	-	0 vs. 17

\* according to SLEDAI definitions (renal, hematological, serositis and neuropsychiatric SLEDAI features were merged into one item - see definitions). \*\*The regression coefficient  $\beta$  corresponds to the difference in TNC levels between groups (when assessing categorical variables) or to the change in TNC associated with a 1 unit increase in the assessed variable (when assessing continuous variables). (N=58, 1 patient had incomplete SLEDAI questionnaire).

# BILAG 2004

(note that the renal BILAG domain could not be properly assessed at inception visit, while its evaluation is heavily dependent on previous measurements which were not captured in our database).

**Additional file 2d** Association of serum levels of Tenascin with the presence of **grade A or B acc. to BILAG** in BILAG domains (N=59). Reference category are all patients without involvement in the respective organ domain.

Domain of BILAG:	Univariate analyses		Age and sex adjusted analyses		Number of patients
	$\beta^*$ (95% CI)	p-value	$\beta^*$ (95% CI)	p-value	
Any of BILAG domain (Y vs. N)	-8.6 (-127.7; 110.6)	0.886	-15.8 (-138.2; 106.6)	0.797	14 vs. 45
Constitutional (Y vs. N)	121.4 (-270.1; 512.9)	0.537	128.0 (-269.1; 525.2)	0.521	1 vs. 58
Mucocutaneous (Y vs. N)	-0.9 (-182.9; 181.2)	0.992	-15.5 (-204.7; 173.6)	0.870	5 vs. 54
Neuropsychiatric (Y vs. N)	-204.3 (-428.6; 20.1)	0.074	-201.8 (-429.8; 26.2)	0.082	3 vs. 56
Musculoskeletal (Y vs. N)	-14.6 (-294.8; 265.5)	0.917	-19.9 (-305.1; 265.3)	0.889	2 vs. 57
Cardiorespiratory (Y vs. N)	231.7 (-156.3; 619.7)	0.237	217.3 (-183.0; 617.5)	0.281	1 vs. 58
Gastrointestinal (Y vs. N)	-	-	-	-	0 vs. 59
Ophthalmic (Y vs. N)	-	-	-	-	0 vs. 59
Renal (Y vs. N)	N/A	N/A	N/A	N/A	N/A
Hematological (Y vs. N)	-5.5 (-398.3; 387.3)	0.978	-14.8 (-414.6; 385.0)	0.941	1 vs. 58

\* The regression coefficient  $\beta$  corresponds to the difference in TNC levels between groups (when assessing categorical variables) or to the change in TNC associated with a 1 unit increase in the assessed variable (when assessing continuous variables). N/A – not applicable

**Additional file 2e** Association of serum levels of Tenascin with the presence of **grade A, B or C acc. to BILAG** in BILAG domains (N=59). Reference category are all patients without involvement in the respective organ domain.

Domain of BILAG:	Univariate analyses		Age and sex adjusted analyses		Number of patients
	$\beta^*$ (95% CI)	p-value	$\beta^*$ (95% CI)	p-value	
Any of BILAG domain (Y vs. N)	82.6 (-34.6; 199.7)	0.164	78.2 (-42.9; 199.2)	0.201	45 vs. 14
Constitutional (Y vs. N)	-20.5 (-300.7; 259.6)	0.884	-13.4 (-298.2; 271.4)	0.925	2 vs. 57
Mucocutaneous (Y vs. N)	10.8 (-111.5; 133.1)	0.860	8.8 (-115.4; 132.9)	0.888	13 vs. 46
Neuropsychiatric (Y vs. N)	-204.3 (-428.6; 20.1)	0.074	-201.8 (-429.8; 26.2)	0.082	3 vs. 56
Musculoskeletal (Y vs. N)	78.7 (-49.8; 207.2)	0.225	80.4 (-50.1; 210.8)	0.222	11 vs. 48
<b>Cardiorespiratory (Y vs. N)</b>	<b>249.2 (28.1; 470.4)</b>	<b>0.028</b>	<b>252.0 (27.7; 476.4)</b>	<b>0.028</b>	3 vs. 56
Gastrointestinal (Y vs. N)	-	-	-	-	0 vs. 59
Ophthalmic (Y vs. N)	-	-	-	-	0 vs. 59
Renal (Y vs. N)	N/A	N/A	N/A	N/A	N/A
Hematological (Y vs. N)	95.4 (-5.4; 196.3)	0.063	92.8 (-14.7; 200.3)	0.089	36 vs. 23

\* The regression coefficient  $\beta$  corresponds to the difference in TNC levels between groups (when assessing categorical variables) or to the change in TNC associated with a 1 unit increase in the assessed variable (when assessing continuous variables). N/A – not applicable

**Additional file 2f** Association of serum levels of Tenascin with the presence of **grade A or B acc. to BILAG** in each BILAG domain. Reference category are all patients with BILAG=D or E in all BILAG domains. (N=59).

Domain of BILAG:	Univariate analyses		Age and sex adjusted analyses		Number of patients
	$\beta^*$ (95% CI)	p-value	$\beta^*$ (95% CI)	p-value	
<i>No grade A or B in all BILAG domains</i>	<i>reference category</i>		<i>reference category</i>		45
Any of BILAG domain	-8.6 (-127.7; 110.6)	0.886	-15.8 (-138.2; 106.6)	0.797	14 vs. 45
Constitutional	117.3 (-241.1; 475.8)	0.513	125.2 (-238.4; 488.8)	0.491	1 vs. 45
Mucocutaneous	-2.8 (-180.3; 174.7)	0.974	-20.8 (-205.2; 163.6)	0.821	5 vs. 45
Neuropsychiatric	-195.9 (-404.3; 12.4)	0.065	-190.6 (-402.2; 20.9)	0.076	3 vs. 45
Musculoskeletal	-16.2 (-273.2; 240.9)	0.900	-19.7 (-281.0; 241.6)	0.880	2 vs. 45
Cardiorespiratory	225.8 (-132.7; 584.2)	0.211	210.2 (-160.0; 580.5)	0.258	1 vs. 45
Gastrointestinal	-	-	-	-	0 vs. 45
Ophthalmic	-	-	-	-	0 vs. 45
Renal	N/A	N/A	N/A	N/A	N/A
Hematological	-7.5 (-365.9; 351.0)	0.967	-12.7 (-378.0; 352.6)	0.944	1 vs. 45

\* The regression coefficient  $\beta$  corresponds to the difference in TNC levels between groups (when assessing categorical variables) or to the change in TNC associated with a 1 unit increase in the assessed variable (when assessing continuous variables). N/A – not applicable

**Additional file 2g** Association of serum levels of Tenascin with the presence of **grade A, B or C acc. to BILAG** in each BILAG domain. Reference category are all patients with BILAG=D or E in all BILAG domains. (N=59).

Domain of BILAG:	Univariate analyses		Age and sex adjusted analyses		Number of patients
	$\beta^*$ (95% CI)	p-value	$\beta^*$ (95% CI)	p-value	
<i>No grade A, B or C in all BILAG domains</i>	<i>reference category</i>		<i>reference category</i>		14
Any of BILAG domain	82.6 (-34.6; 199.7)	0.164	78.2 (-42.9; 199.2)	0.201	45 vs. 14
Constitutional	43.1 (-219.4; 305.7)	0.730	41.2 (-231.4; 313.8)	0.749	2 vs. 14
Mucocutaneous	71.4 (-72.4; 215.2)	0.316	77.0 (-74.6; 228.5)	0.304	13 vs. 14
Neuropsychiatric	-130.9 (-339.0; 77.2)	0.200	-128.1 (-342.8; 86.6)	0.222	3 vs. 14
Musculoskeletal	127.0 (-21.2; 275.2)	0.089	141.3 (-16.4; 299.0)	0.076	11 vs. 14
<b>Cardiorespiratory</b>	<b>299.6 (78.8; 520.4)</b>	<b>0.011</b>	<b>304.4 (76.0; 532.8)</b>	<b>0.013</b>	3 vs. 14
Gastrointestinal	-	-	-	-	0 vs. 14
Ophthalmic	-	-	-	-	0 vs. 14
Renal	N/A	N/A	N/A	N/A	N/A
Hematological	100.2 (-14.0; 214.4)	0.084	100.0 (-20.3; 220.2)	0.101	36 vs. 14

\* The regression coefficient  $\beta$  corresponds to the difference in TNC levels between groups (when assessing categorical variables) or to the change in TNC associated with a 1 unit increase in the assessed variable (when assessing continuous variables). N/A – not applicable