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**Supporting information for article:**

**Comparative structure analysis of the ETSi domain of ERG3 and its complex with the E74 promoter DNA sequence**

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**Table S1** Helical parameters of DNA in various ETS class1 proteins-DNA complexes

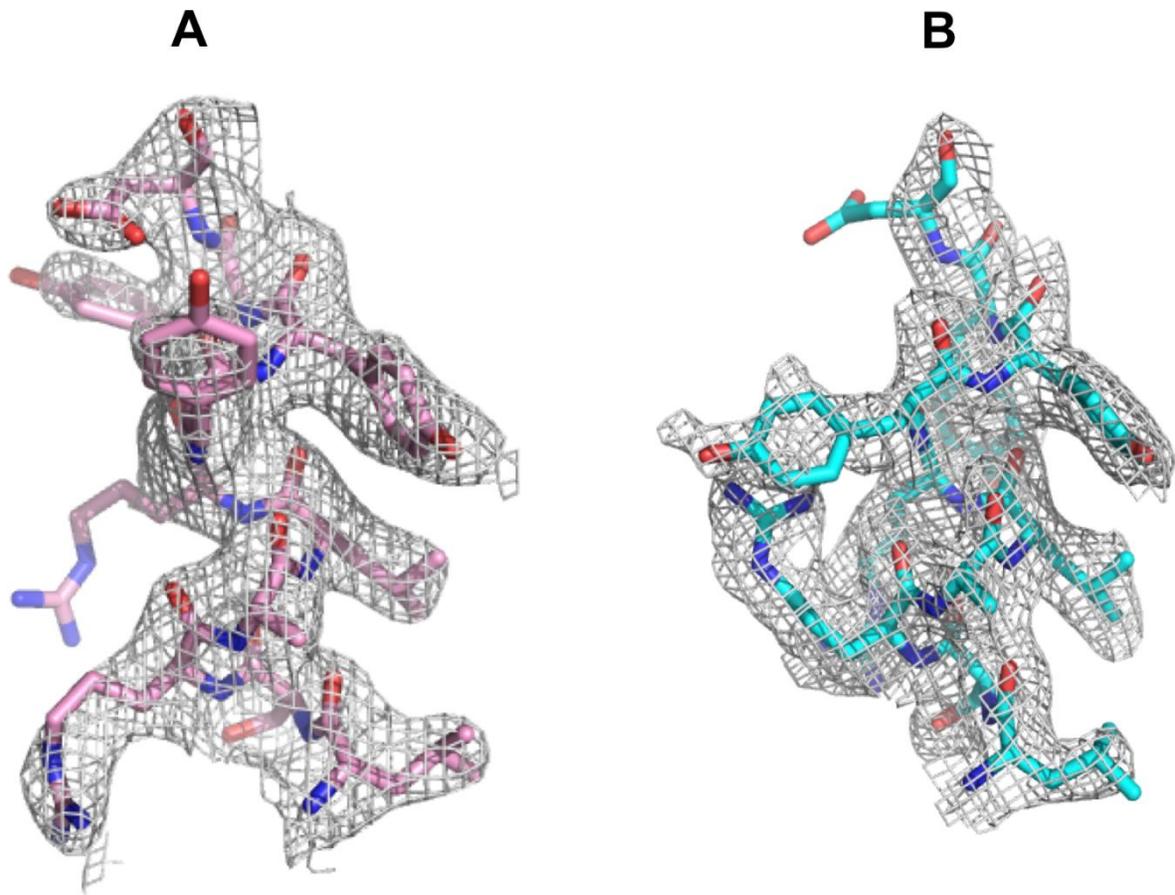
<b>Protein</b>	<b>Helical Rise (Å)</b>	<b>Helical twist (°)</b>	<b>Roll (°)</b>	<b>Inclination (°)</b>	<b>X-disp (Å)</b>	<b>Minor groove (Å)</b>	<b>Major groove (Å)</b>
ETSi-DNA <sub>9</sub>	3.2	32.6	3.9	6.9	-1.3	14.1	19.1
ERGi-DNA <sub>12</sub>	3.2	33.3	4.1	7.3	-0.9	13.8	18.4
Sap1-E74 <sub>DNA</sub>	3.3	33.7	4.8	8.4	-0.9	13.1	19.4
Fli1-DNA	3.1	33.7	5.7	9.8	-1.4	13.9	19.5
Etv6-DNA	3.2	33.3	3.2	6.2	-1.0	13.1	17.4
Etv5-DNA	3.2	32.4	3.9	7.0	-1.4	13.5	18.0
Etv4-DNA	3.3	33.6	4.7	8.0	-1.2	13.9	18.4
Etv1-DNA	3.2	33.3	5.0	8.7	-1.5	14.0	17.6
Fev-DNA	3.3	33.8	4.2	7.2	-1.1	14.6	18.1
Ets1-DNA	3.1	33.6	5.1	8.7	-1.4	12.7	18.0
Ets2-DNA	3.2	32.8	5.0	8.8	-1.7	13.8	18.0
Elk1-DNA	3.2	33.6	4.8	8.4	-0.9	14.0	19.4
GABP $\alpha$ -DNA	3.2	34.8	4.8	5.3	-1.0	12.7	18.1

Data were calculated using program web3DNA server (Zheng G. et. al., 2009). All values are average base pair parameters. E74<sub>DNA</sub> duplexes were taken from all published coordinates from PDB database for ETSi-DNA<sub>9</sub> complex (PDB-5YBD), ERGi-DNA<sub>12</sub> (PDB-4IRI), Sap1-E74<sub>DNA</sub> complex (PDB-1BC7), Fli1-DNA complex (PDB-5E8I), Etv6-DNA complex (PDB-4MHG), Etv5-DNA complex (PDB-4UNO), Etv4-DNA complex (PDB-4UUV), Etv1-DNA complex (PDB-4BNC), Fev-DNA complex (PDB-3ZP5), Ets1-DNA complex (PDB-3MFK), Elk1-DNA complex (PDB-1DUX), GABP $\alpha$ -DNA complex (PDB-1AWC).

**Table S2** ETS-DNA interactions in various ETS class1 proteins-DNA complexes

Nucleotides	ETSi-DNA <sub>9</sub>	ERGi-DNA <sub>12</sub>	Sap1-E74 <sub>DNA</sub>	Fli1	Etv6	Etv5	Domain
<b>5'-3' site</b>							
<b>G 1</b>	-	Y369(OH)	-	-	-	-	<b>α3 helix</b>
<b>A -3</b>	Y362(OH), K380, Y386(N)	Y354(OH), K363,R368, Y369(N)	Y56(OH), F80(N), K79, K74	Y332(OH), K350, R355, Y356(N)	Y387(OH), K405, L411(N) <b>C -3</b>	Y419(OH), K437, Y443(N)	<b>α3, β3- turn-β4</b>
<b>C -2</b>	Y373(OH)	Y356(OH)	Y67(OH), K74	Y343 (OH)	Y398(OH)	Y430(OH), K437	<b>α3, β3- turn-β4</b>
<b>C -1</b>	-	-	-	-	-	-	<b>α3, β3- turn-β4</b>
<b>G 1</b>	R370(NH <sub>1</sub> )	R353(NH <sub>1</sub> )	R64(N <sub>ε</sub> ,NH <sub>2</sub> )	-	R395(N <sub>ε</sub> )	R427(N <sub>ε</sub> , NH <sub>2</sub> )	<b>α3 helix</b>
<b>G 2</b>	R367(N <sub>ε</sub> ,NH <sub>2</sub> )	R350(N <sub>ε</sub> , NH <sub>2</sub> )	R61(N <sub>ε</sub> ,NH <sub>2</sub> )	R337(NH <sub>2</sub> )	R392(NH <sub>2</sub> , N <sub>ε</sub> )	R424(N <sub>ε</sub> )	<b>α3 helix</b>
<b>A 3</b>	Y371(OH)	Y354	Y65	Y341	-	-	<b>α3 helix</b>
<b>A 4</b>	-	-	-	-	-	-	<b>α3 helix</b>
<b>3'-5' site</b>							
<b>T 3'</b>	N359, K364(N <sub>ζ</sub> )	K347(N <sub>ζ</sub> )	K58(N <sub>ζ</sub> )	K334	K389(N <sub>ζ</sub> )	R414(NH <sub>1</sub> ), K421(N <sub>ζ</sub> )	<b>α2-α3</b>
<b>T 4'</b>	W351(N <sub>ε1</sub> ), K355(N <sub>ζ</sub> )	W334(N <sub>ε1</sub> ), K338	Y65, W45(N <sub>ε1</sub> ), K49(N <sub>ζ</sub> ), M54	W321(N <sub>ε1</sub> ), K325, M330	H396 (N <sub>ε2</sub> ), W376 (N <sub>ε1</sub> ), K380(N <sub>ζ</sub> )	W408(N <sub>ε□</sub> ), K412(N <sub>ζ</sub> )	<b>α1-α2</b>
<b>C 5'</b>	Q312, L313(N), Y372(OH)	L296(N), Y355(OH), Q295	T6, L7(N), Y66(OH)	Q282, L283(N), Y342(OH)	L337(N), Y397(OH)	Q369(N), L370(OH), Y429(OH), S425	<b>α1-α2</b>
<b>A 6'</b>	-	K358(N <sub>ζ</sub> )	K69	S294(O <sub>γ</sub> ), K345(N <sub>ζ</sub> )	-	-	<b>α1-α2</b>

Nucleotides	Etv4	Etv1	Fev	Ets1	Ets2	Elk1	GABP $\alpha$	Domain
<b>5'-3' site</b>								
<b>G 1</b>	-	-	-	-	-	-	-	$\alpha 3$ helix
<b>A -3</b>	Y392(OH), Y416(N)	K404, R409, Y410	Y98(OH), K116, Y122(N)	Y386(OH), K404(N $\zeta$ ), Y410(N)	Y414(OH), K432, Y438(N)	Y57(OH), K75, F81(N)	R394	$\beta 3$ -turn- $\beta 4$
<b>C -2</b>	Y403, K410	Y397 (OH)	Y109(OH), K116	Y397(OH)	Y425(OH)	Y68 (OH)	Y371 (OH), K389(N $\zeta$ ), F395(N)	$\beta 3$ -turn- $\beta 4$
<b>C -1</b>	-	-	-	<b>A -1</b>	-	-	Y382 (OH),	$\beta 3$ -turn- $\beta 4$
<b>G 1</b>	R400(NH $_2$ )	R391, R394 (NH $_2$ )	R106(NH $_2$ , N $\epsilon$ )	R394(N $\epsilon$ )	R422(N $\epsilon$ , NH $_2$ )	R65(N $\epsilon$ , NH $_2$ )	R379(NH $_2$ , N $\epsilon$ )	$\alpha 3$ helix
<b>G 2</b>	R397(N $\square$ , NH $_2$ )	R391	R103(N $\epsilon$ )	R391 (N $\epsilon$ , NH $_2$ )	R419 (N $\epsilon$ , NH $_2$ )	R62(NH $_2$ , N $\epsilon$ )	R376(NH $_2$ , N $\epsilon$ )	$\alpha 3$ helix
<b>A 3</b>	-	Y395	-	Y395(OH)	Y423	-	Y380 (OH)	$\alpha 3$ helix
<b>A 4</b>	-	-	-	-	Y423	-	-	$\alpha 3$ helix
<b>3'-5' site</b>								
<b>T 3'</b>	R387	K388	-	K381(N $\zeta$ ) K388(N $\zeta$ )	K416 (N $\zeta$ ),	K52(N $\zeta$ ), K59(N $\zeta$ ),	K364(N $\zeta$ ), W360	$\alpha 2$ - $\alpha 3$
<b>T 4'</b>	W381(N $\epsilon_1$ ), K385(N $\zeta$ )	Y395, W375 (N $\epsilon_1$ ), K379	W87(N $\epsilon_{\square}$ )	W375, K379(N $\zeta$ )	Y423, W403 (N $\epsilon_1$ ), K407	W46(N $\epsilon_{\square}$ ), K50(N $\zeta$ )	Q321 (N $\epsilon_2$ , N), L322(N), Y381, Y380	$\alpha 1$ - $\alpha 2$
<b>C 5'</b>	S398, Q342(N $\epsilon_2$ ), L343(N), Y402(OH)	Q336 (N $\epsilon_2$ ), L337, Y396 (OH)	Q48 L49(N) Y108(OH)	L337(N), Y396(OH)	L365 (N), Y424(OH), Q364	T6, L7(N), Y67(OH)	K364(N $\zeta$ )	$\alpha 1$ - $\alpha 2$
<b>A 6'</b>	D434	-	-	Q336 K399	K427(N $\zeta$ )	-	-	$\alpha 1$ - $\alpha 2$



**Figure S1** Weighted fourier  $/2Fo - Fc/$  map contoured at  $1.1\sigma$  of  $\alpha_3$  helix of (A) native ETSi domain at 2.5 Å resolution and (B) ETSi-DNA<sub>9</sub> complex at 2.7 Å resolution.