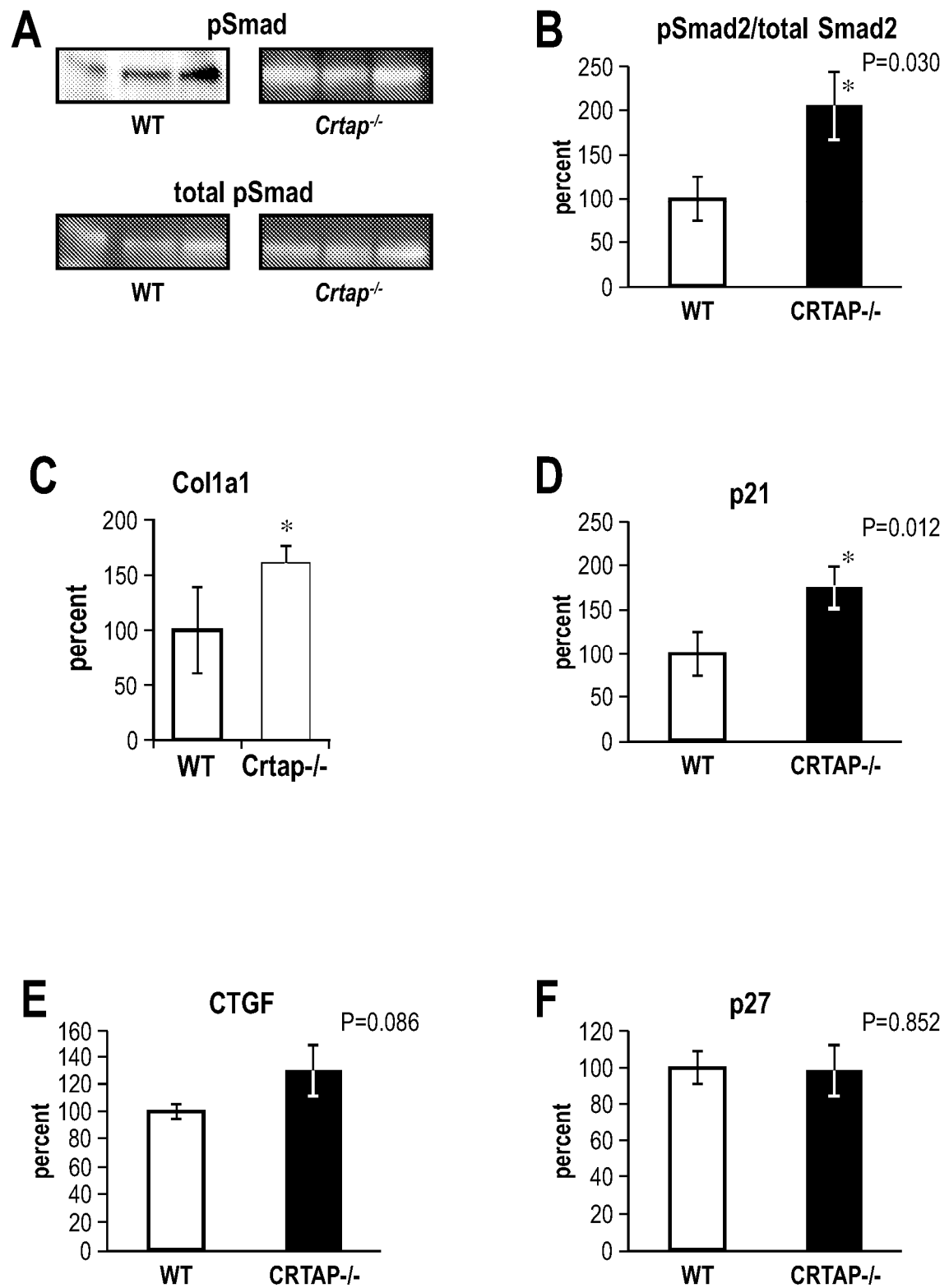
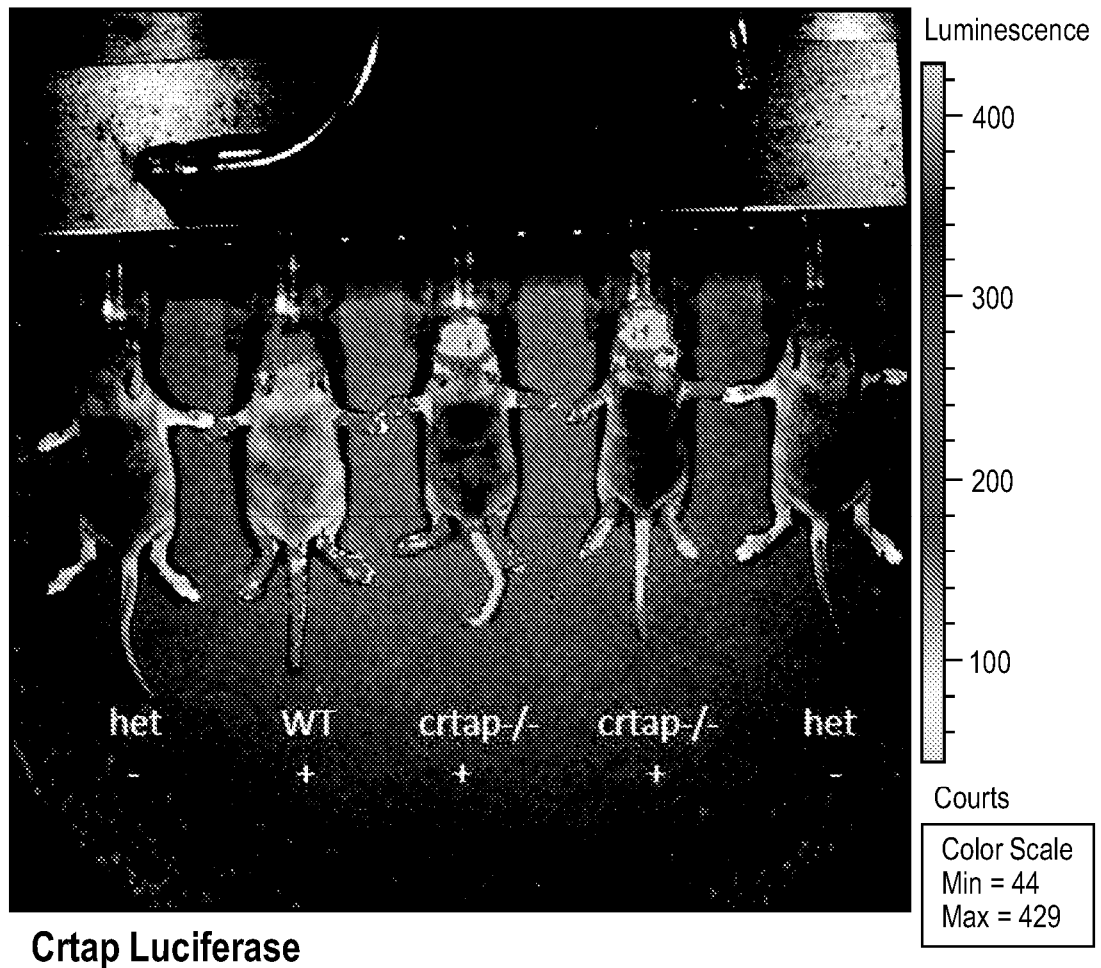
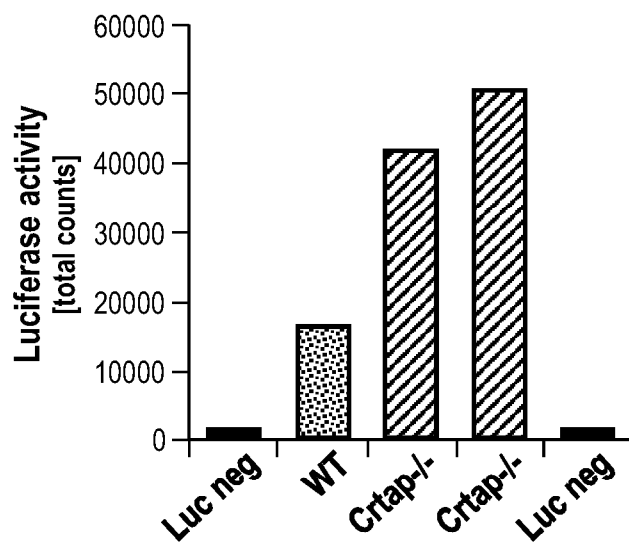
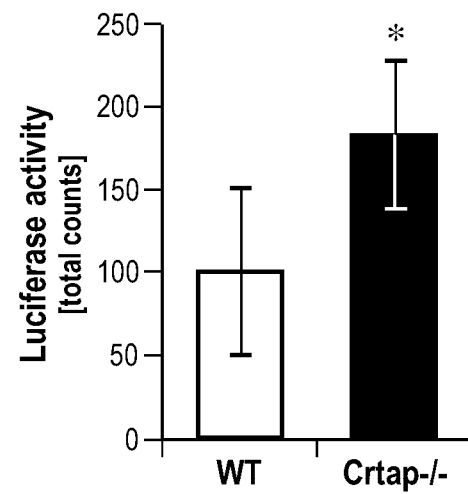


**Fig. 1**

A**B****TGFb reporter activity****C****TGFb reporter activity****Fig. 2**

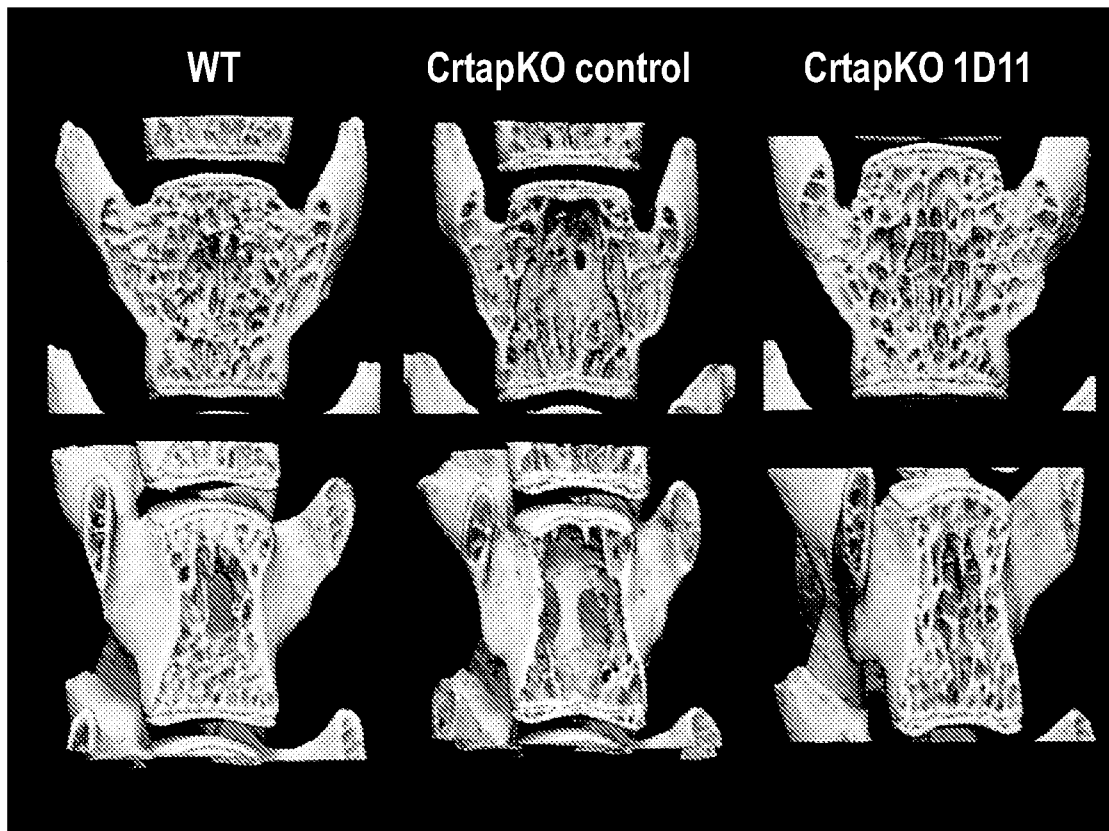


Fig. 3

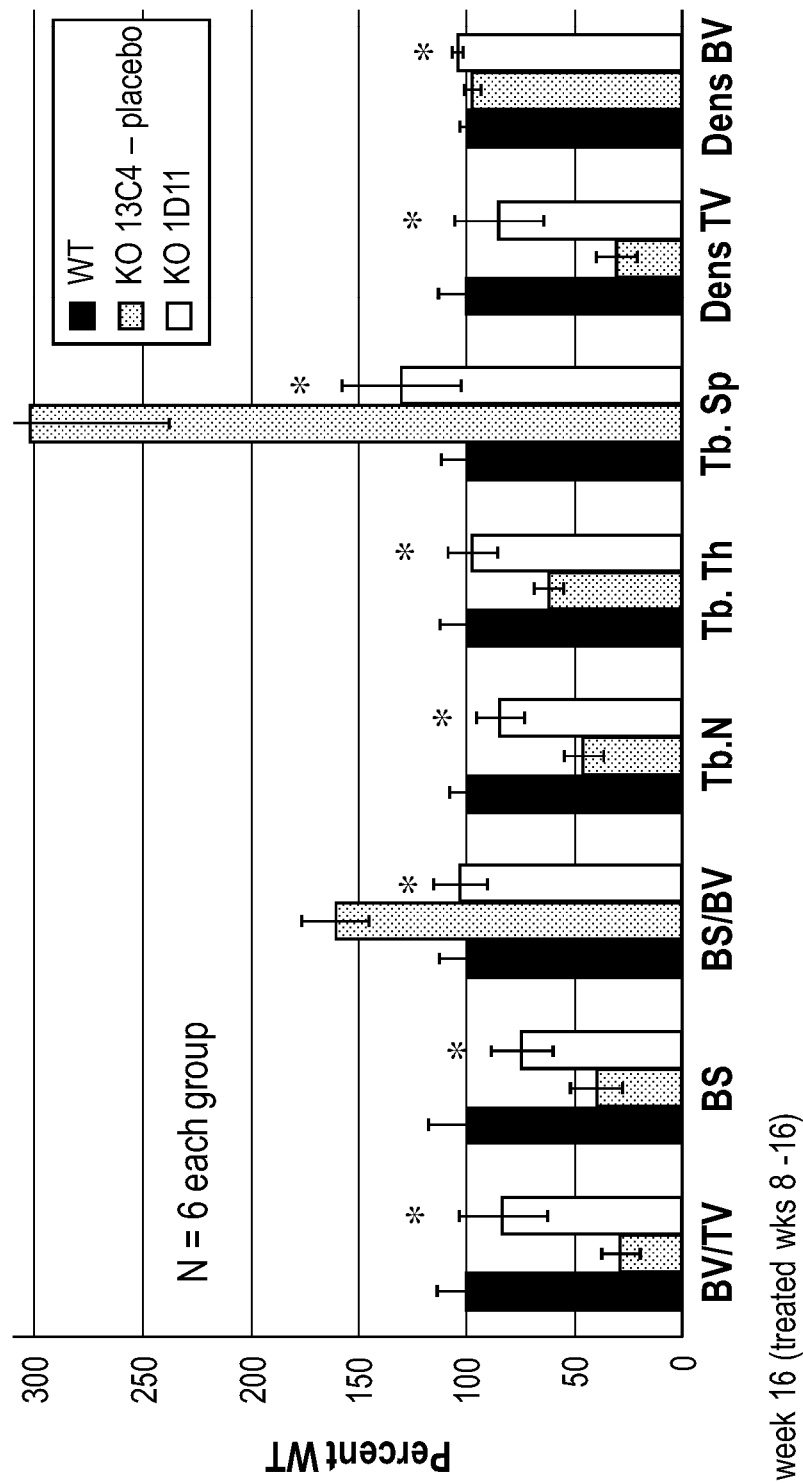


Fig. 4

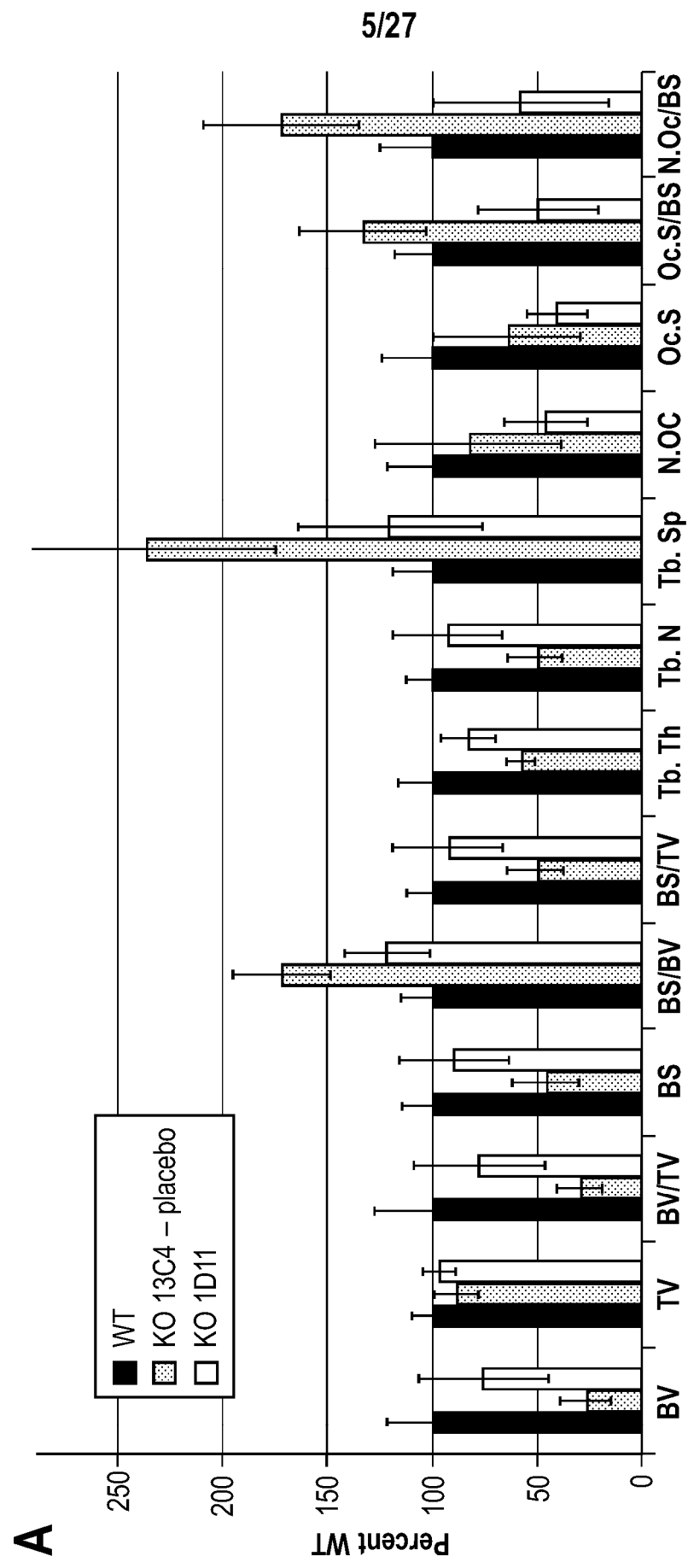


Fig. 5

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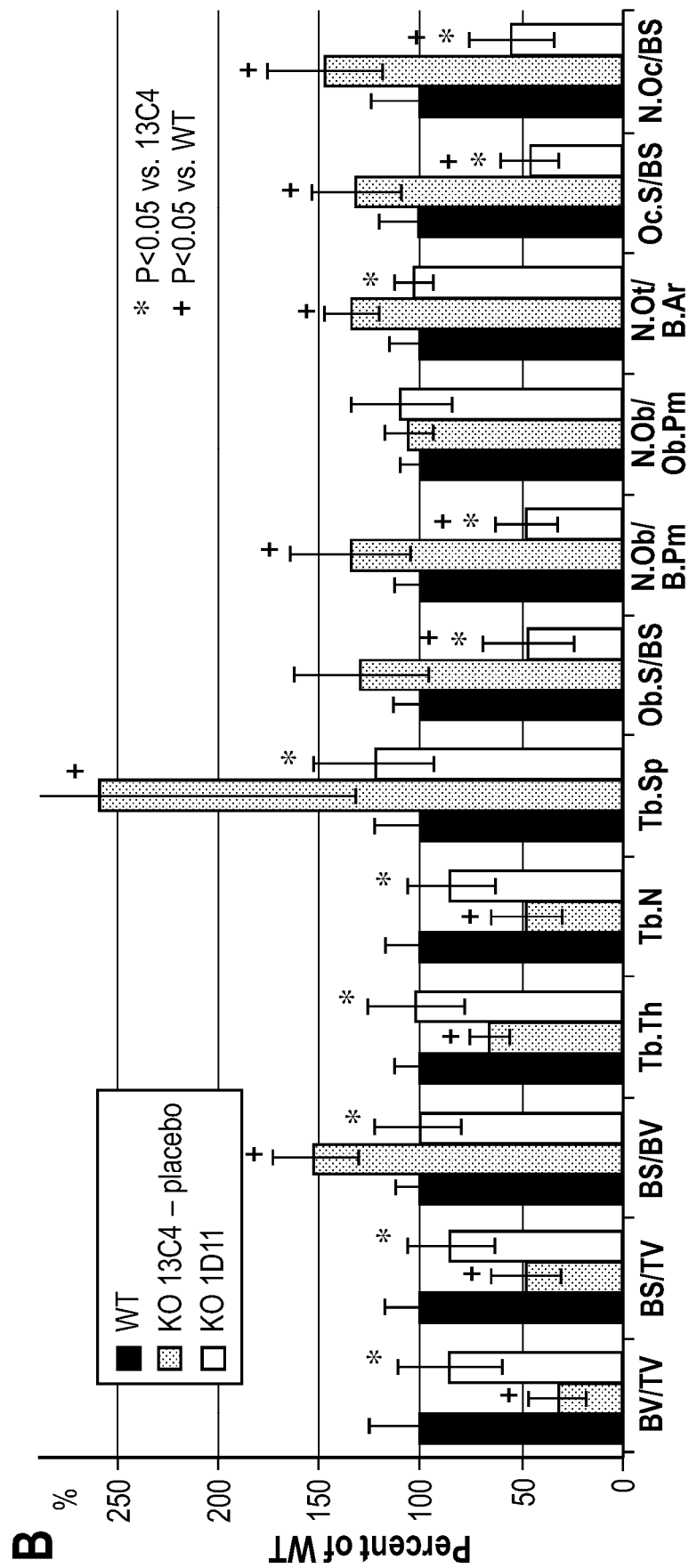


Fig. 5

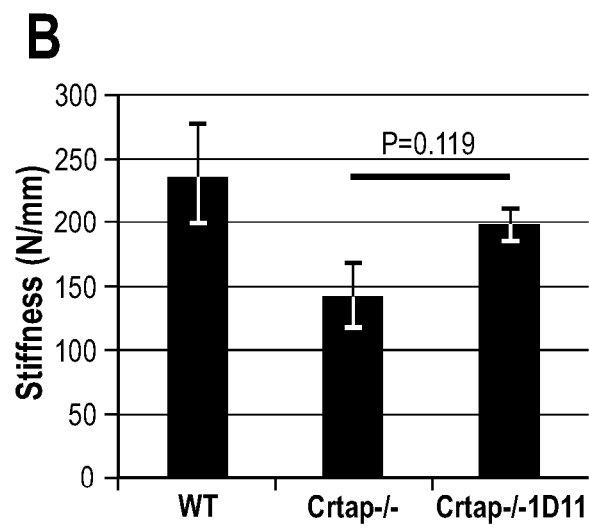
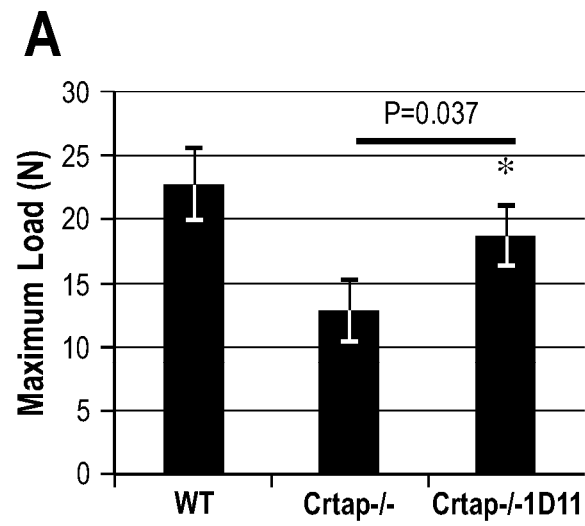


Fig. 6

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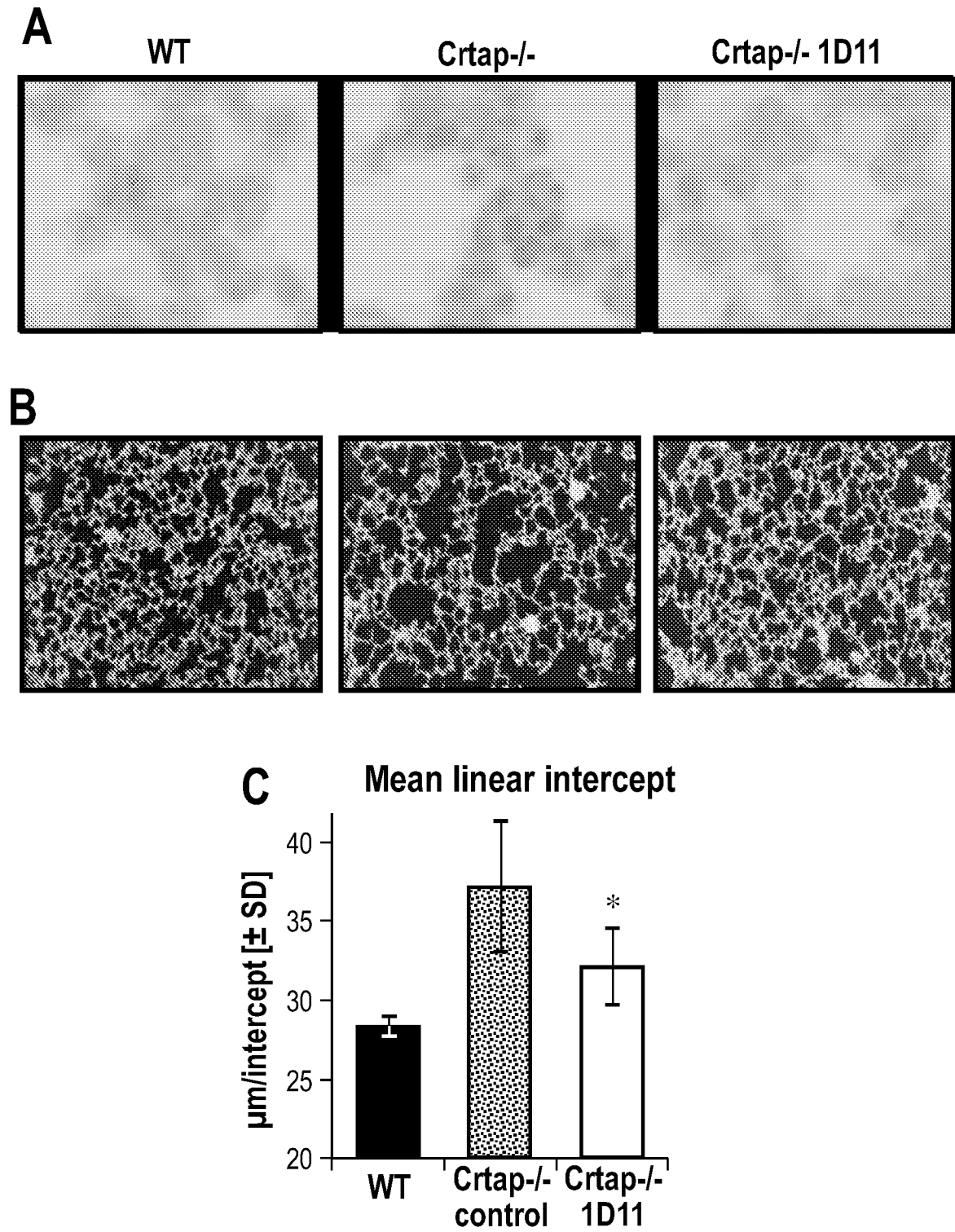


Fig. 7

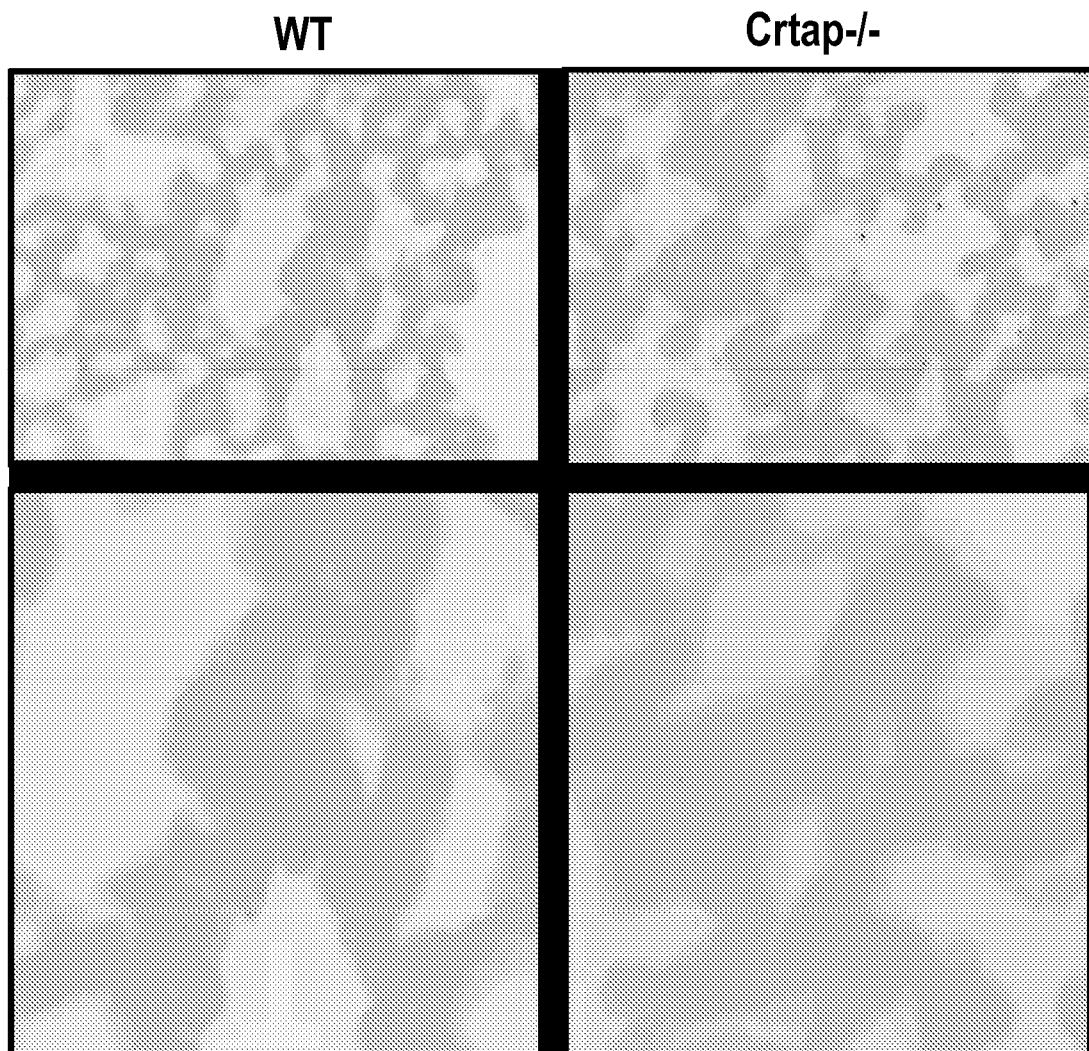


Fig. 8

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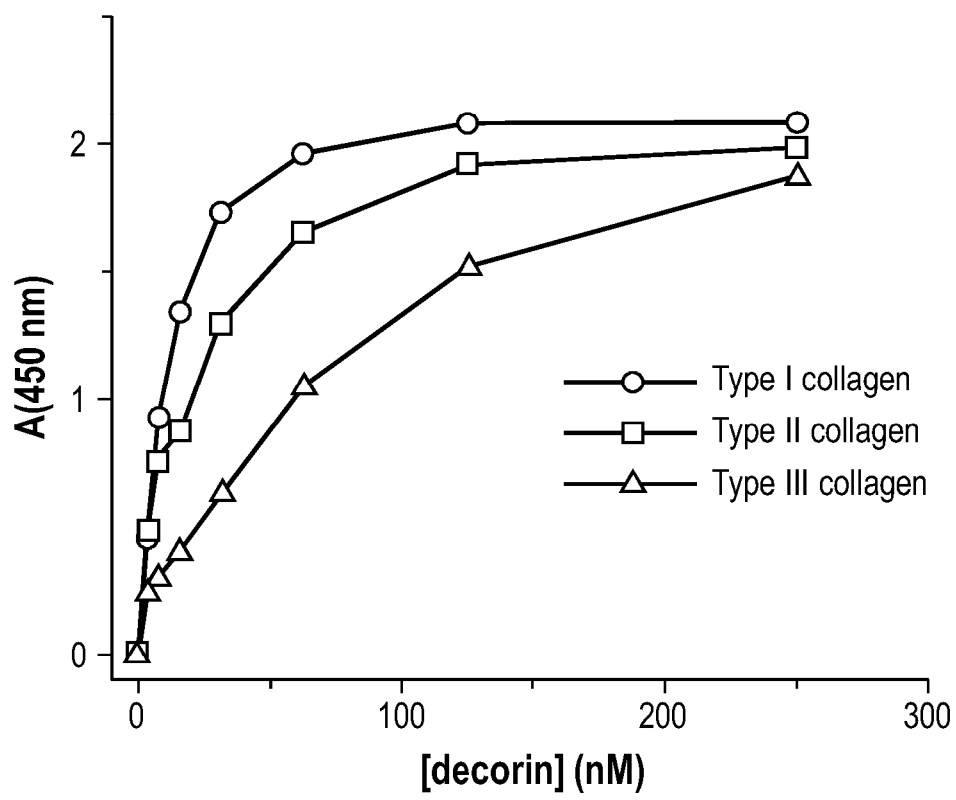
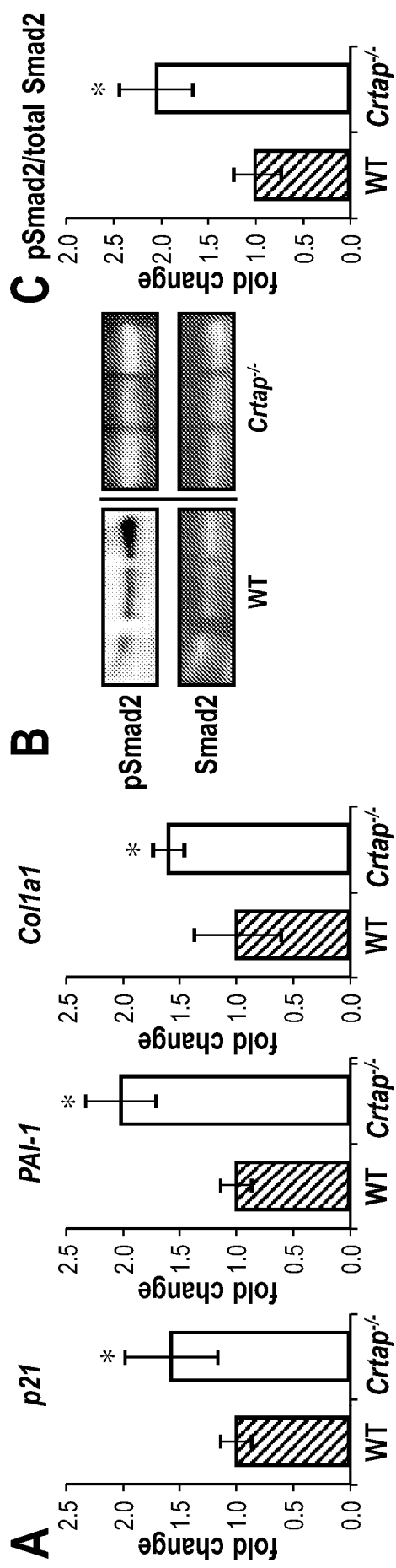


Fig. 9



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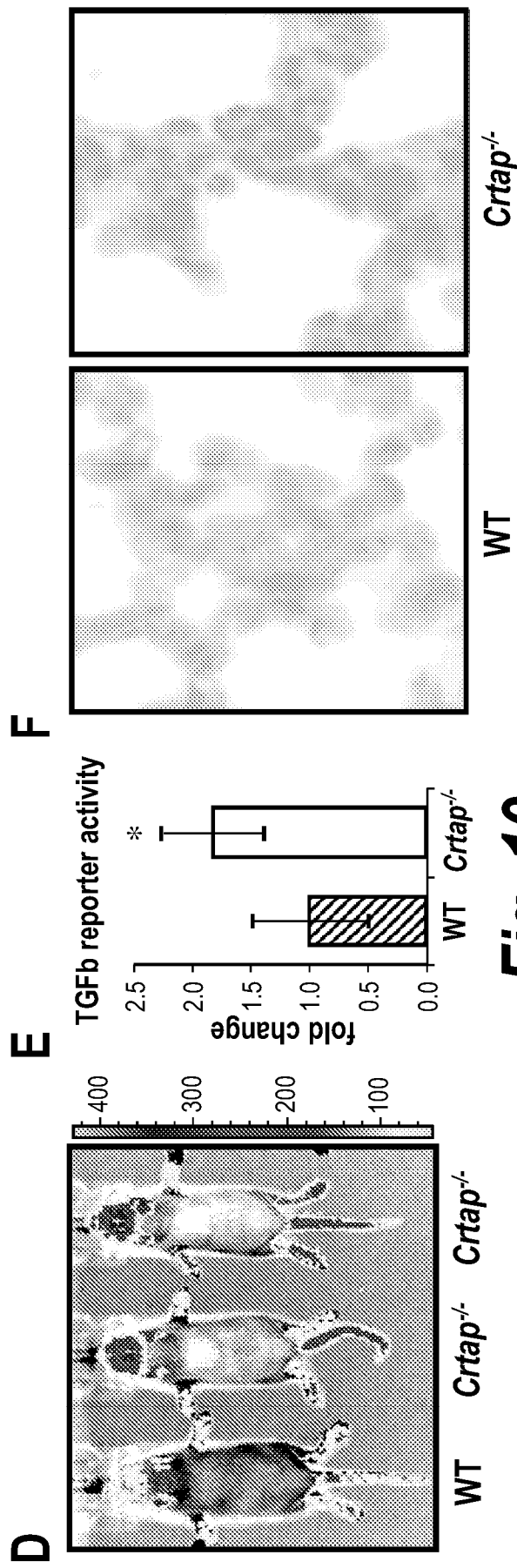


Fig. 10

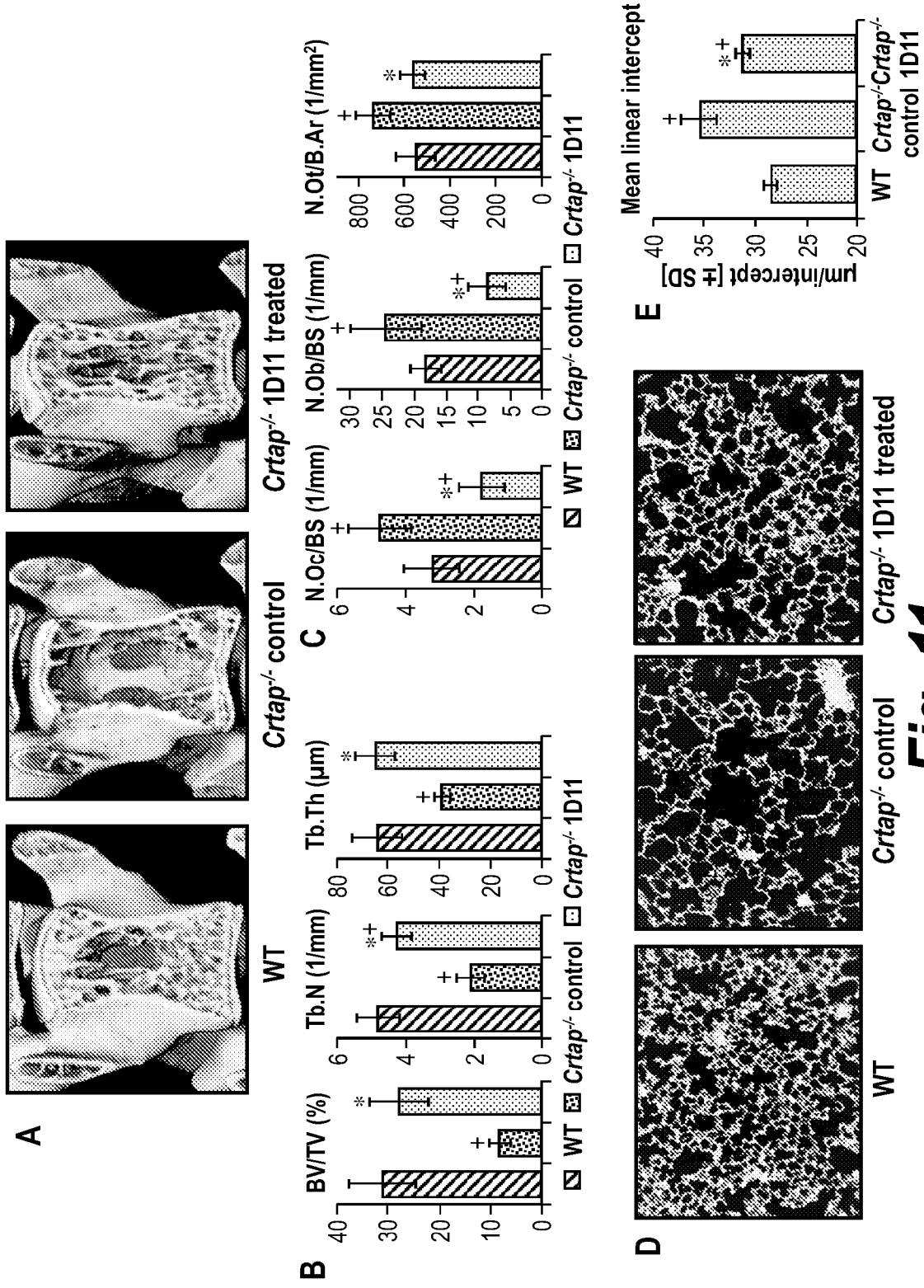
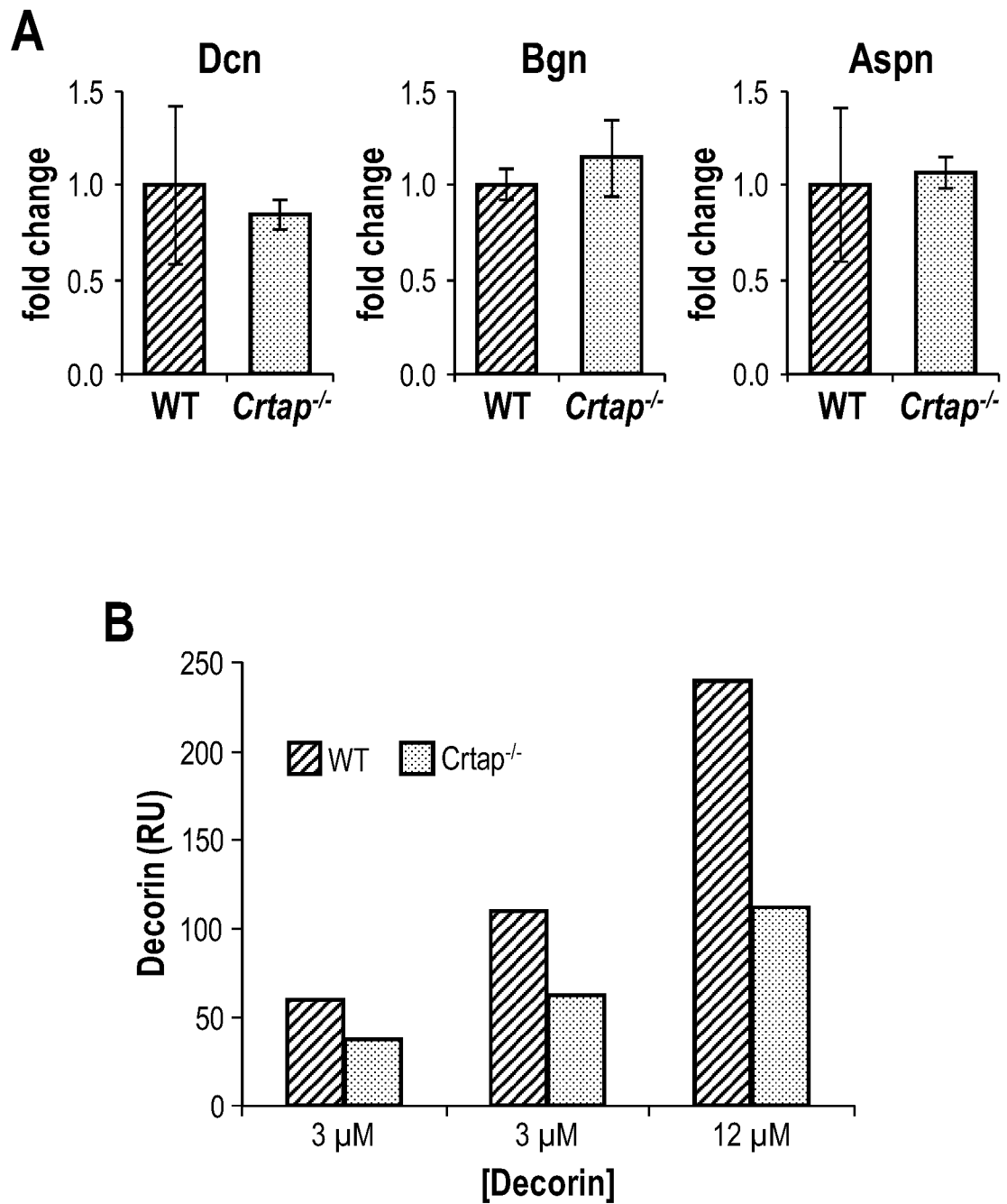


Fig. 11

**Fig. 12**

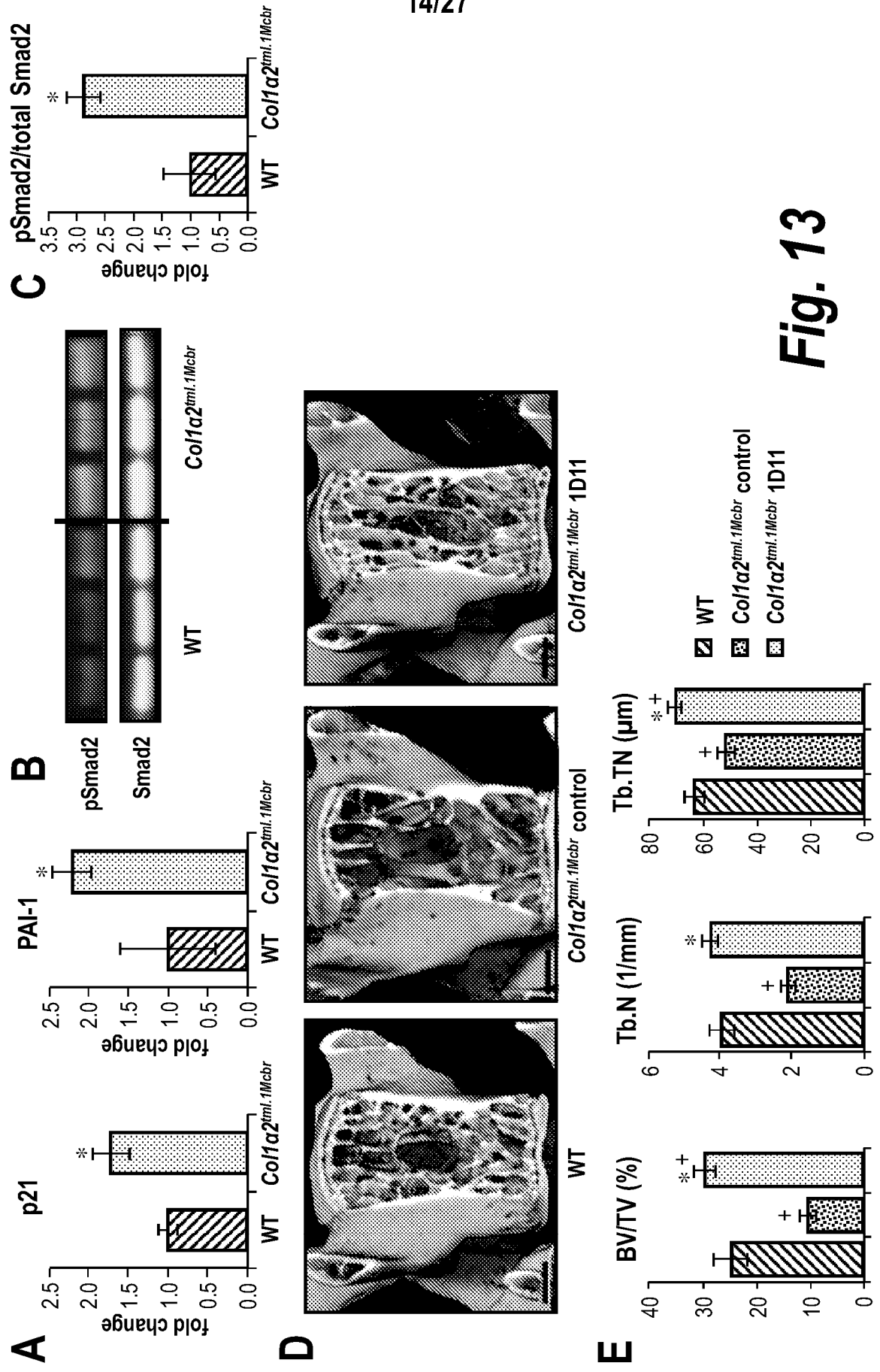


Fig. 13

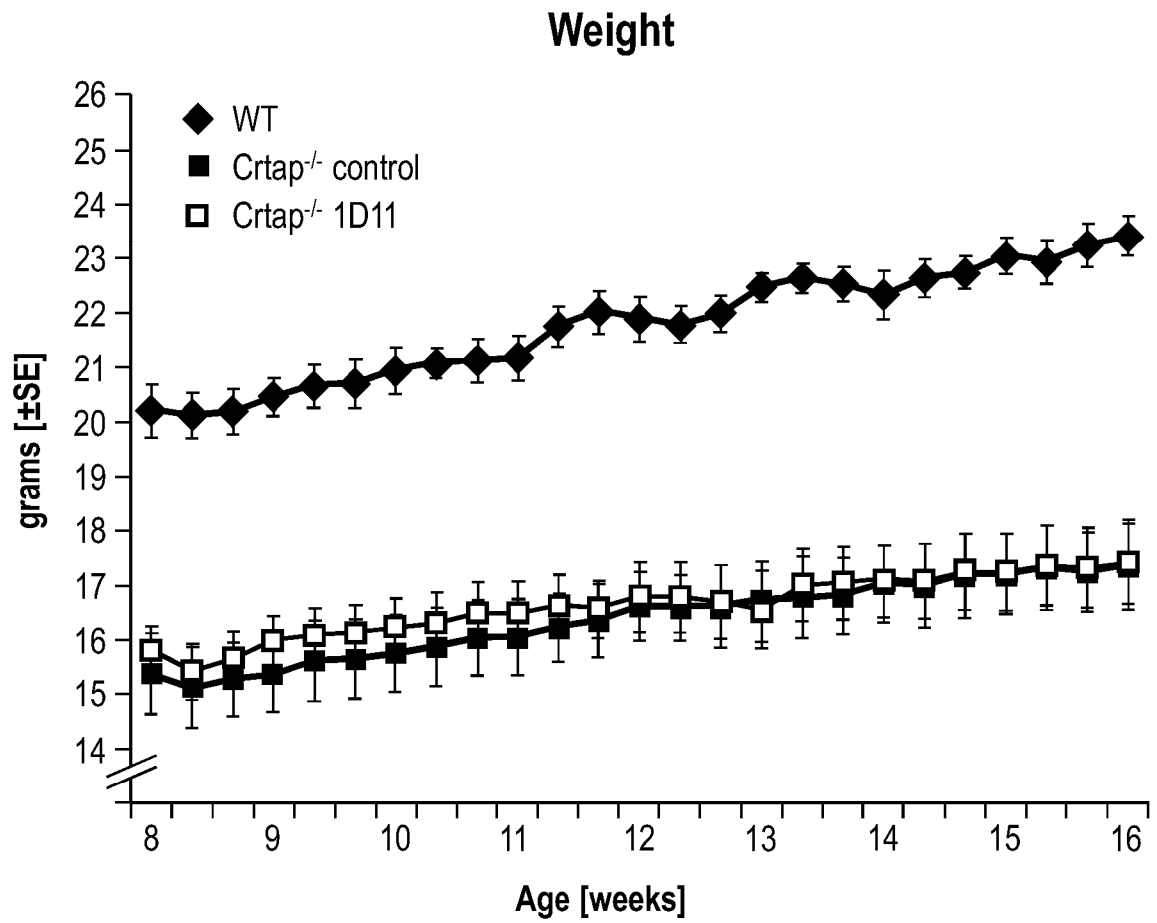


Fig. 14

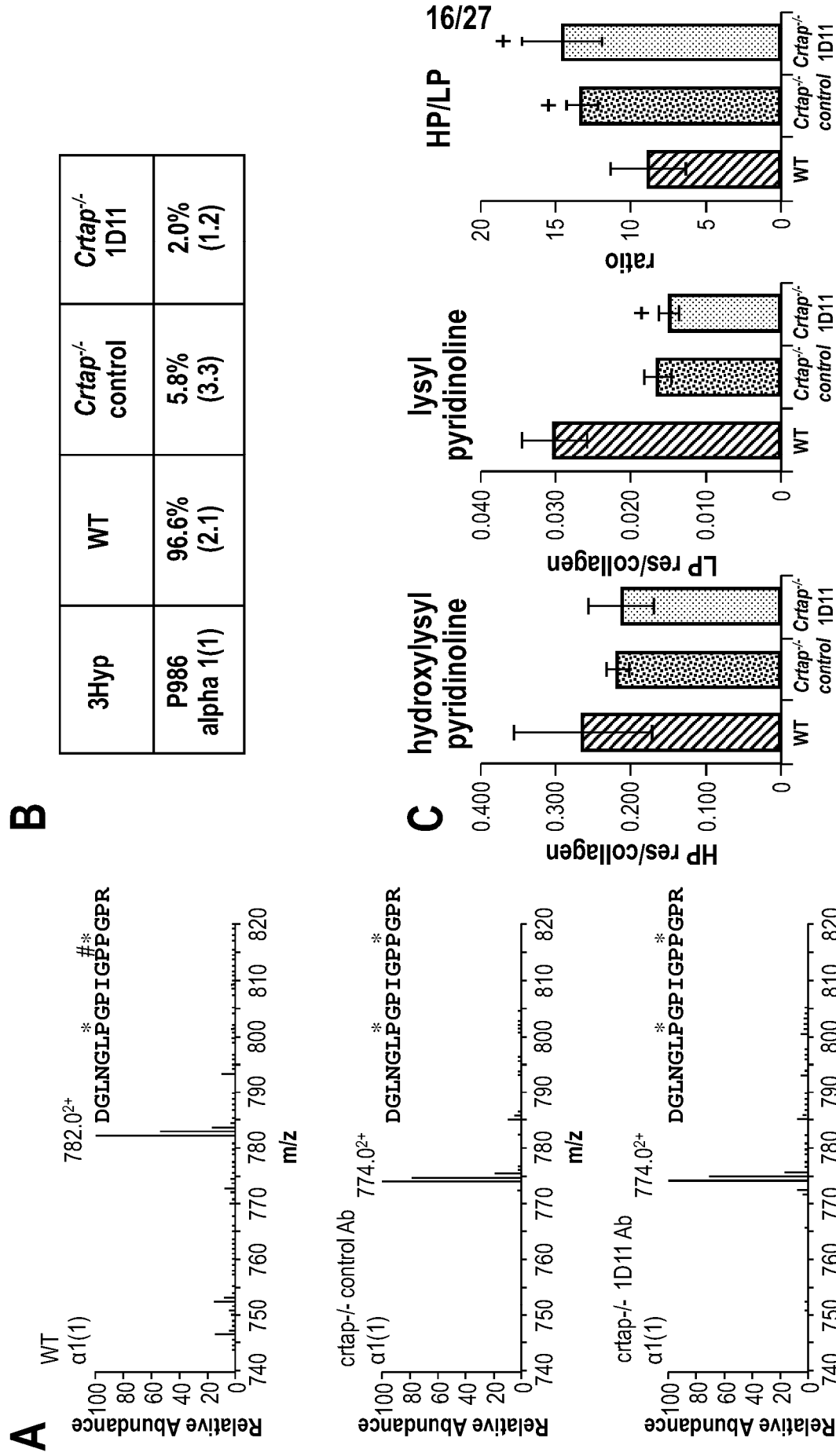
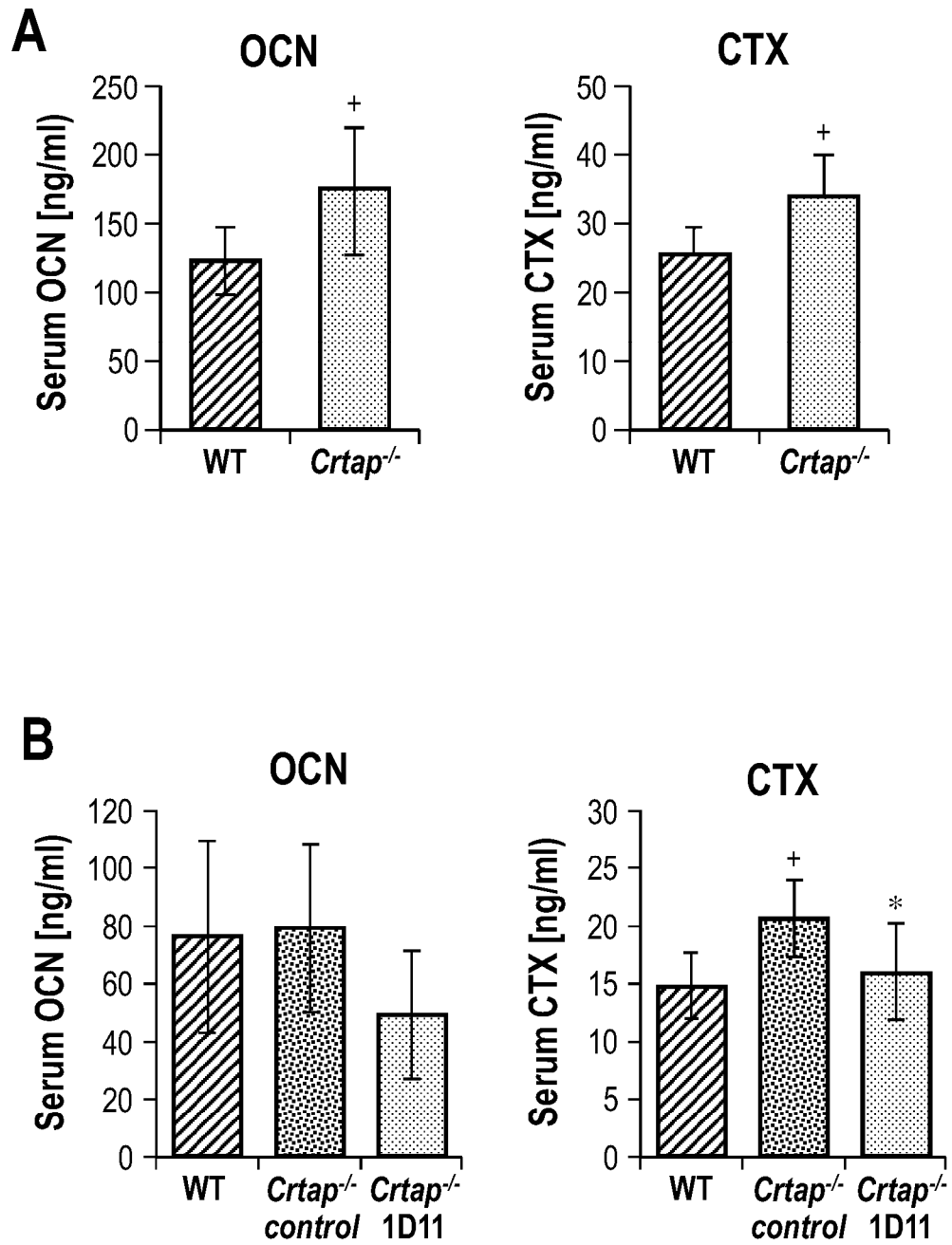


Fig. 15

**Fig. 16**

	BV/TV (%)	Tb.N (1/mm)	Tb.Th (μ m)	Tb.Sp (mm)	BMD BV (mg HA/ccm)
Wild type	0.312	4.845	63.988	0.145	703.189
SD	0.065	0.583	9.482	0.034	19.014
<i>Crtap</i>^{-/-} control	0.084	2.130	38.888	0.450	677.416
SD	0.020	0.409	2.931	0.118	16.138
<i>Crtap</i>^{-/-} 1D11	0.280	4.290	64.650	0.171	746.862
SD	0.056	0.435	7.407	0.030	26.564
ANOVA P value	<0.001	<0.001	<0.001⁺	<0.001⁺	<0.001
Pairwise P values					
Wild type vs. <i>Crtap</i> ^{-/-} control	<0.001	<0.001	<0.05	<0.05	0.023
Wild type vs. <i>Crtap</i> ^{-/-} 1D11	n.s.	0.031	n.s.	n.s.	<0.001
<i>Crtap</i> ^{-/-} control vs. <i>Crtap</i> ^{-/-} 1D11	<0.001	<0.001	<0.05	<0.05	<0.001

Fig. 17

	BV/TV (%)	Tb.N (1/mm)	Tb.Th (μ m)	Tb.Sp (mm)	BMD BV (mg HA/ccm)
Wild type	0.107	2.808	37.413	0.341	733.864
SD	0.036	0.684	5.071	0.108	25.997
<i>Crtap</i>^{-/-} control	0.029	0.861	32.863	1.209	727.151
SD	0.011	0.237	3.428	0.345	28.765
<i>Crtap</i>^{-/-} 1D11	0.123	2.953	40.663	0.323	756.539
SD	0.045	0.767	5.842	0.121	36.913
ANOVA P value	<0.001⁺	<0.001⁺	0.015	<0.001	0.162
Pairwise P values					
Wild type vs. <i>Crtap</i> ^{-/-} control	<0.05	<0.05	n.s.	<0.001	
Wild type vs. <i>Crtap</i> ^{-/-} 1D11	n.s.	n.s.	n.s.	n.s.	
<i>Crtap</i> ^{-/-} control vs. <i>Crtap</i> ^{-/-} 1D11	<0.05	<0.05	0.004	<0.001	

Fig. 18

	Cortical thickness (mm)	BMD BV (mg HA/ccm)	Diameter a.p. (mm)	CSA (mm ²)	CSMI m.l. (mm ⁴)	CSMI a.p. (mm ⁴)
Wild type	0.242	1084.726	1.239	0.905	0.134	0.221
SD	0.014	28.375	0.063	0.079	0.023	0.042
<i>Crtap</i>^{-/-} control	0.203	1084.885	1.142	0.731	0.101	0.162
SD	0.020	34.256	0.065	0.082	0.021	0.034
<i>Crtap</i>^{-/-} 1D11	0.221	1096.127	1.186	0.808	0.111	0.186
SD	0.026	39.754	0.080	0.118	0.028	0.038
ANOVA <i>P</i> value	0.003	0.753	0.039	0.005	0.032	0.021
Pairwise <i>P</i> values						
Wild type vs. <i>Crtap</i> ^{-/-} control	<0.001		0.012	0.001	0.011	0.006
Wild type vs. <i>Crtap</i> ^{-/-} 1D11	n.s.		n.s.	n.s.	n.s.	n.s.
<i>Crtap</i> ^{-/-} control vs. <i>Crtap</i> ^{-/-} 1D11	n.s.		n.s.	n.s.	n.s.	n.s.

Fig. 19

	Maximum load (N)	Stiffness (N/mm)	Energy to failure (N*mm)	Ultimate strength (MPa)	Toughness to failure (MPa)	Elastic modulus (GPa)	Total displacement (mm)	Elastic displacement (mm)	Post-yield displacement (mm)
Wild type	22.831	230.578	7.846	154.704	11.912	6.960	0.444	0.068	0.376
SD	2.860	37.053	3.985	7.478	5.695	0.731	0.207	0.014	0.203
<i>Crtap</i>^{-/-} control	12.943	151.689	1.228	114.496	2.208	6.663	0.127	0.079	0.048
SD	2.402	27.384	0.913	18.240	1.677	1.154	0.057	0.006	0.058
<i>Crtap</i>^{-/-} 1D11	18.818	200.804	1.991	145.633	3.408	7.248	0.156	0.073	0.083
SD	2.337	15.644	0.834	19.074	1.851	0.271	0.055	0.013	0.055
ANOVA P value	<0.001	0.009	0.009	0.004	0.009	0.658	0.015	0.360	0.012
Pairwise P values									
Wild type vs. <i>Crtap</i> ^{-/-} control	<0.001	0.003	0.005	0.001	0.005		0.009		0.007
Wild type vs. <i>Crtap</i> ^{-/-} 1D11	n.s.	n.s.	0.017	n.s.	0.017		0.023		0.019
<i>Crtap</i> ^{-/-} control vs. <i>Crtap</i> ^{-/-} 1D11	0.015	n.s.	n.s.	0.016	n.s.		n.s.		n.s.

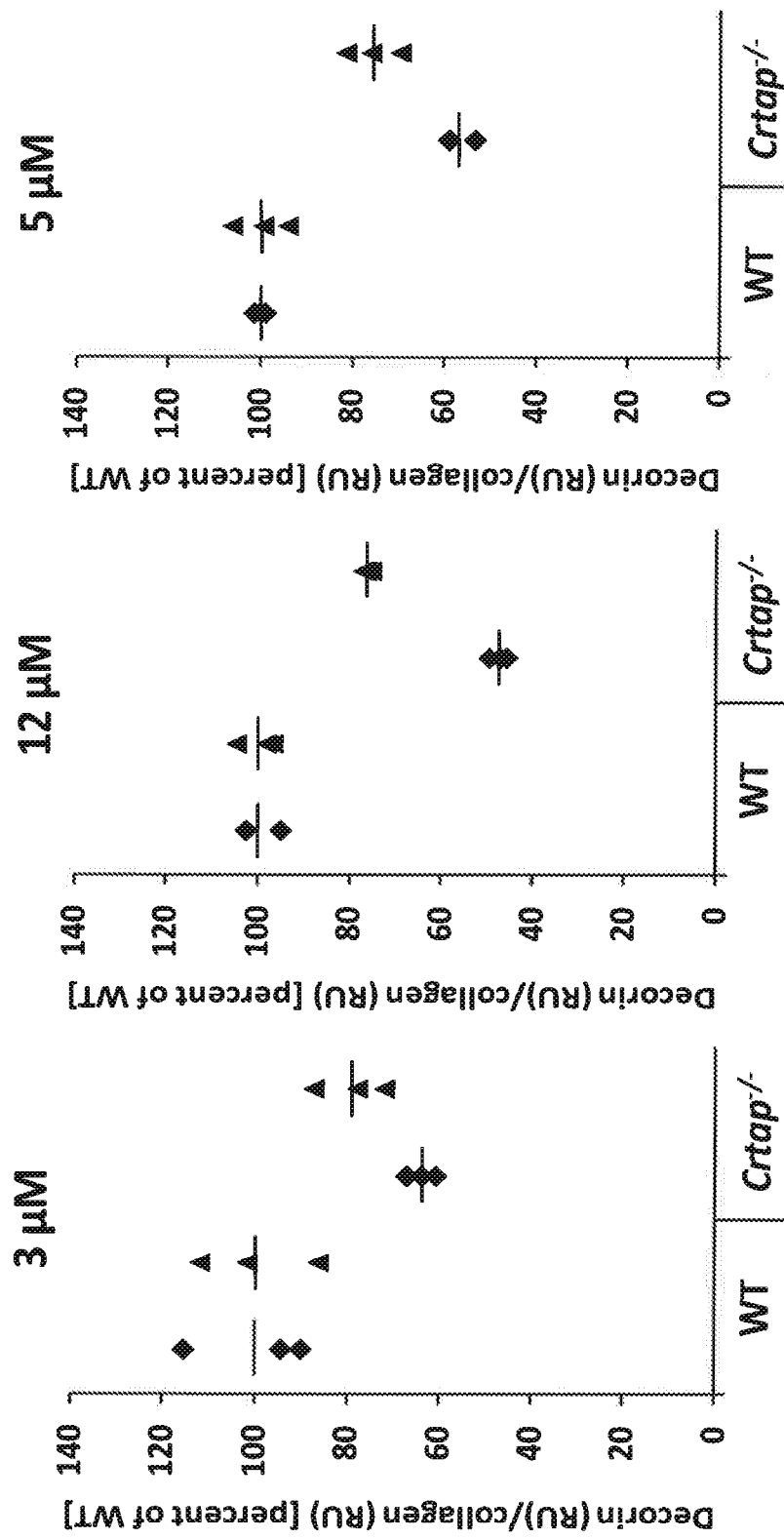
Fig. 20

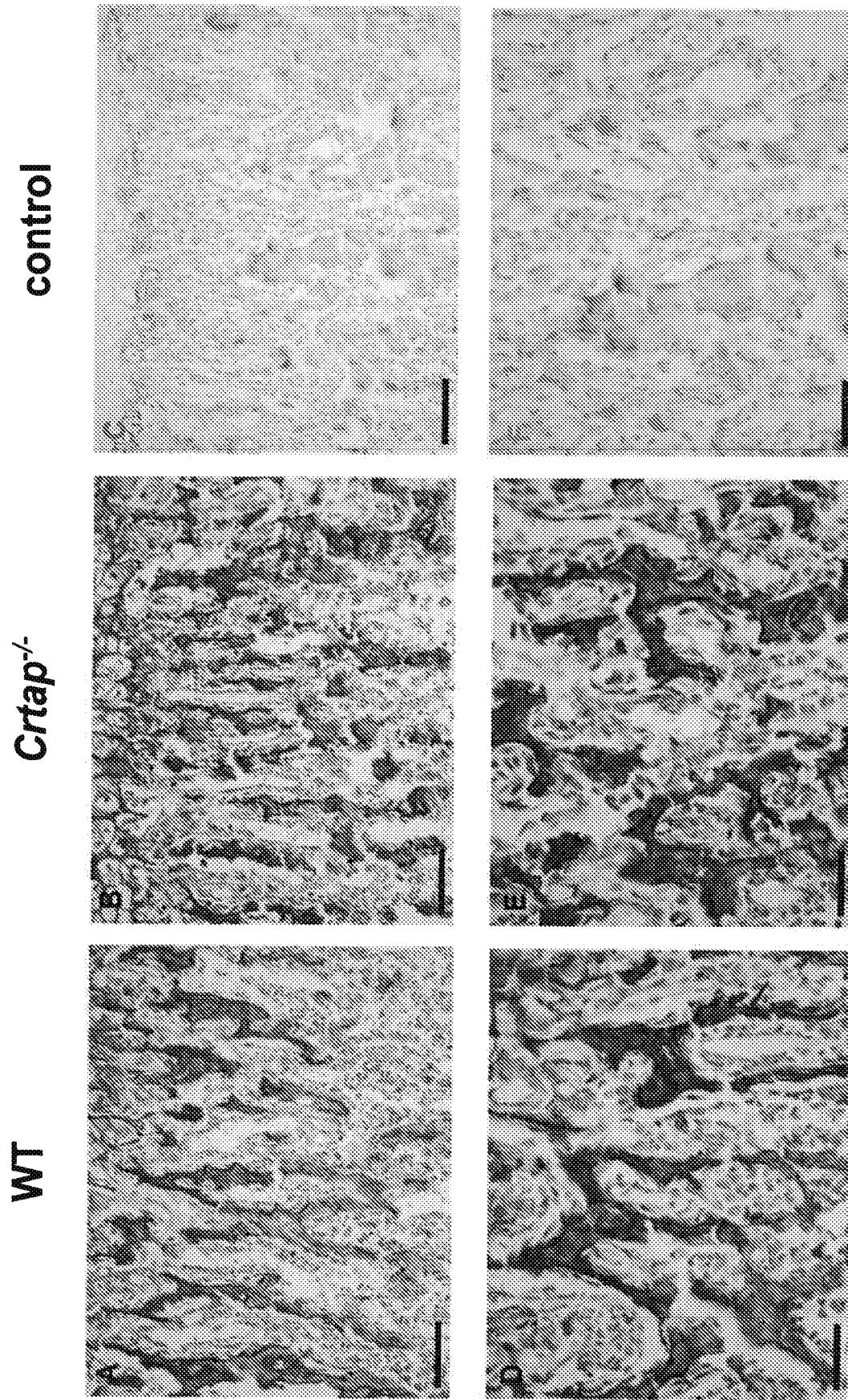
	BV/TV (%)	Tb.N (1/mm)	Tb.Th (μ m)	Tb.Sp (μ m)	N.Oc/BS (1/mm)	Oc.S/BS (%)	N.Ob/BS (1/mm)	Ob.S/BS (%)	N.Ot/B.Ar (1/mm ²)
Wild type	11.956	4.003	29.554	226.736	3.226	15.051	18.142	20.827	549.002
SD	3.067	0.656	3.536	50.077	0.812	3.089	2.368	2.754	83.665
<i>Crtap</i>^{-/-} control	3.817	1.909	19.502	587.008	4.768	19.885	24.487	26.888	735.561
SD	1.656	0.692	2.560	289.835	0.914	3.407	5.421	6.983	72.617
<i>Crtap</i>^{-/-} 1D11	10.203	3.411	30.182	277.886	1.772	6.829	8.638	9.748	565.044
SD	3.097	0.878	6.982	69.118	0.673	2.235	2.855	4.718	51.014
ANOVA <i>P</i> value	<0.001	<0.001	0.002	0.003⁺	<0.001	<0.001	<0.001	<0.001	<0.001
Pairwise <i>P</i> values									
Wild type vs. <i>Crtap</i> ^{-/-} control	<0.001	<0.001	0.002	<0.05	0.005	0.012	0.011	n.s.	<0.001
Wild type vs. <i>Crtap</i> ^{-/-} 1D11	n.s.	n.s.	n.s.	n.s.	0.007	<0.001	<0.001	0.002	n.s.
<i>Crtap</i> ^{-/-} control vs. <i>Crtap</i> ^{-/-} 1D11	<0.001	0.003	0.001	<0.05	<0.001	<0.001	<0.001	<0.001	<0.001

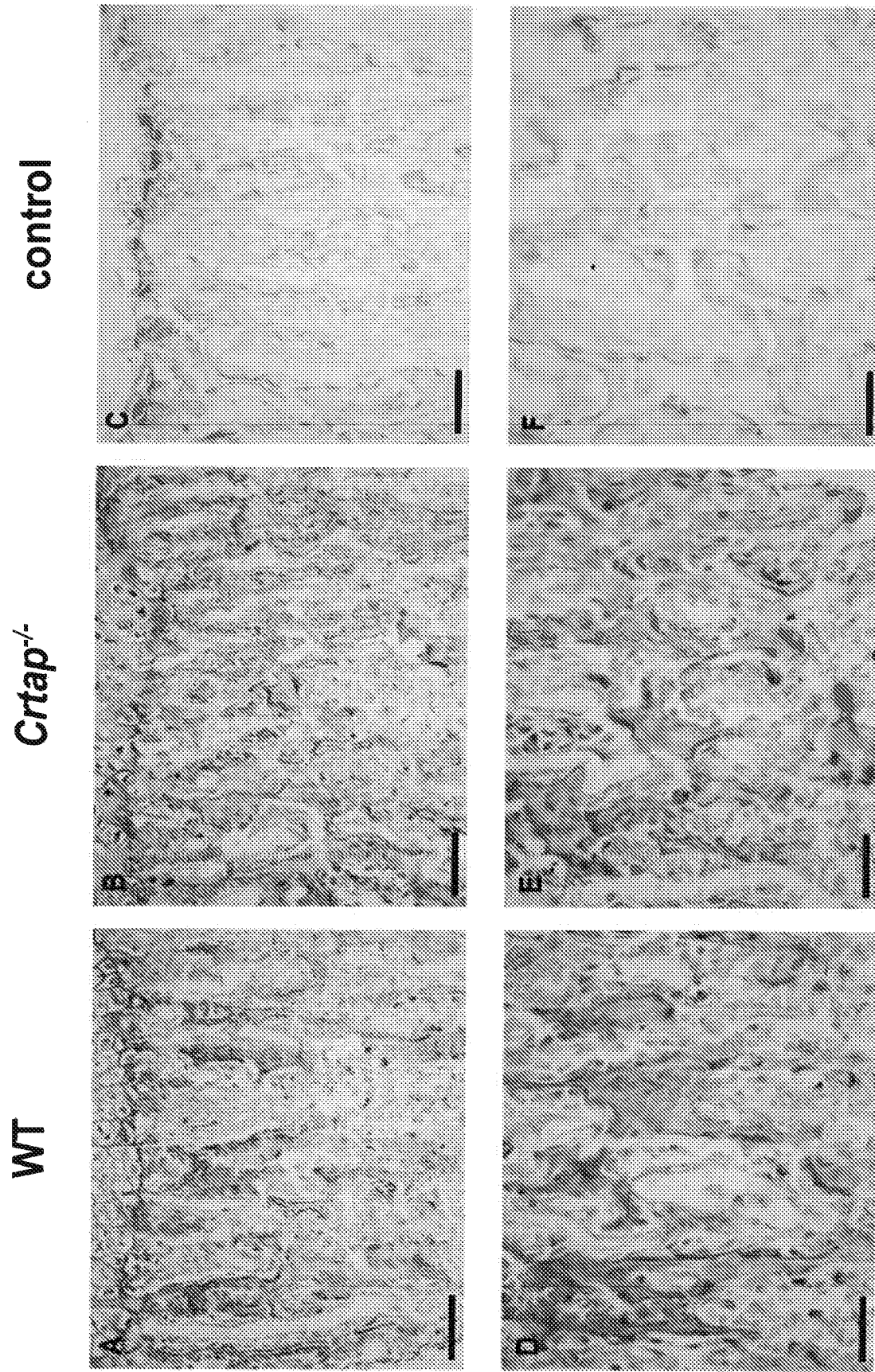
Fig. 21

	BV/TV (%)	Tb.N (1/mm)	Tb.Th (μ m)	Tb.Sp (mm)	BMD BV (mg HA/ccm)
Wild type	0.247	3.939	62.533	0.193	716.669
SD	0.033	0.330	3.497	0.025	7.626
Col1α2^{tm1.1Mcb} control	0.106	2.071	51.067	0.435	731.436
SD	0.015	0.195	2.999	0.047	11.792
Col1α2^{tm1.1Mcb} 1D11	0.297	4.244	69.983	0.166	754.115
SD	0.020	0.199	2.329	0.013	7.844
ANOVA P value	<0.001	<0.001	<0.001	<0.001	<0.001
Pairwise P values					
Wild type vs. Col1 α 2 ^{tm1.1Mcb} control	<0.001	<0.001	<0.001	<0.001	0.015
Wild type vs. Col1 α 2 ^{tm1.1Mcb} 1D11	0.002	n.s.	<0.001	n.s.	<0.001
Col1 α 2 ^{tm1.1Mcb} control vs. Col1 α 2 ^{tm1.1Mcb} 1D11	<0.001	<0.001	<0.001	<0.001	<0.001

Fig. 22

**Fig. 23**

**Fig. 24**

**Fig. 25**

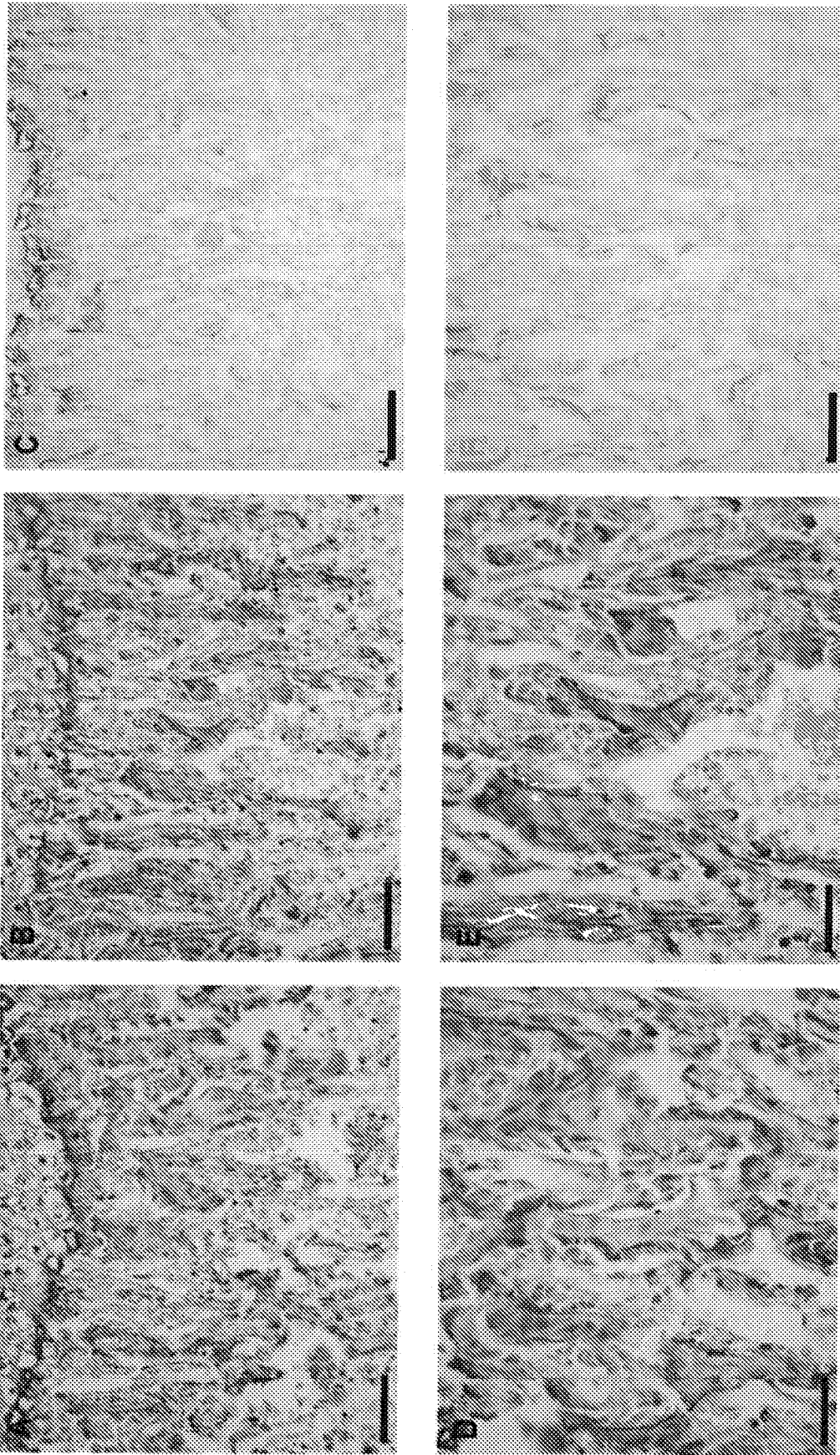


Fig. 26