Supporting Information

Enhanced Biocompatibility and Osteogenic Differentiation of Mesenchymal Stem Cells of Titanium by Sr-Ga Clavate Double Hydroxides

Maowen Chen[a, 1], Bailong Tao[b, 1], Yan Hu[a]*, Menghuan Li[c], Maohua Chen[a], Lu Tan[a], Zhong Luo[c]*, Kaiyong Cai[a]*

[a]Key Laboratory of Biorheological Science and Technology, Ministry of Education, College of Bioengineering, Chongqing University, Chongqing 400044, China.

[b]Laboratory Research Center, The First Affiliated Hospital of Chongqing Medical University, Chongqing, 400016, China.

[c]School of Life Science, Chongqing University, Chongqing 400044, China

*Corresponding author: Professor Yan Hu,

Professor Zhong Luo & Professor Kaiyong Cai

E-mail: huyan303@cqu.edu.cn; luozhong918@cqu.edu.cn; kaiyong_cai@cqu.edu.cn.

[1] Co-first authors: these authors contributed equally to this work.

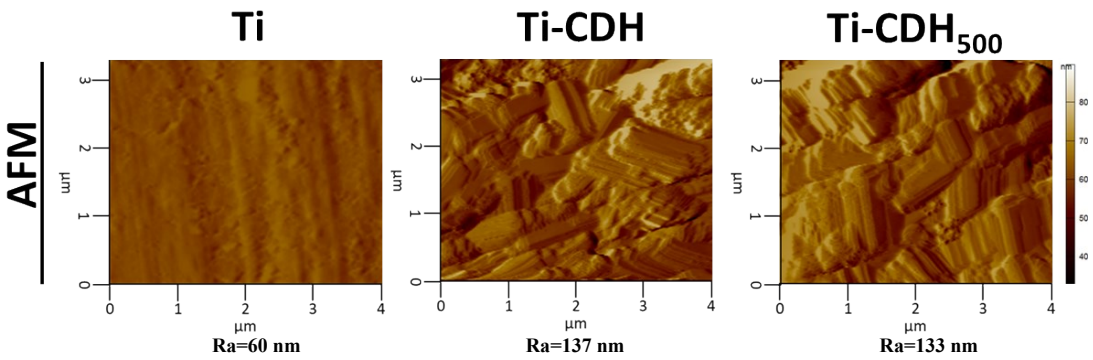

Fig. S1. AFM images of Ti, Ti-CDH and Ti-CDH_{500} groups.

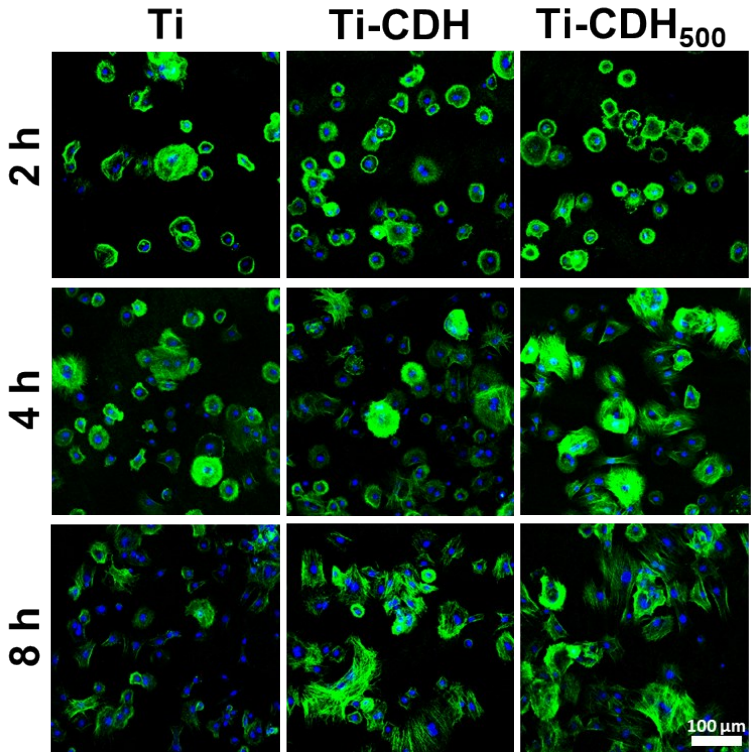

Fig. S2. (A) Initial MSCs adhesion on various Ti substrates for 2, 4, and 8 h with cytoskeleton staining.

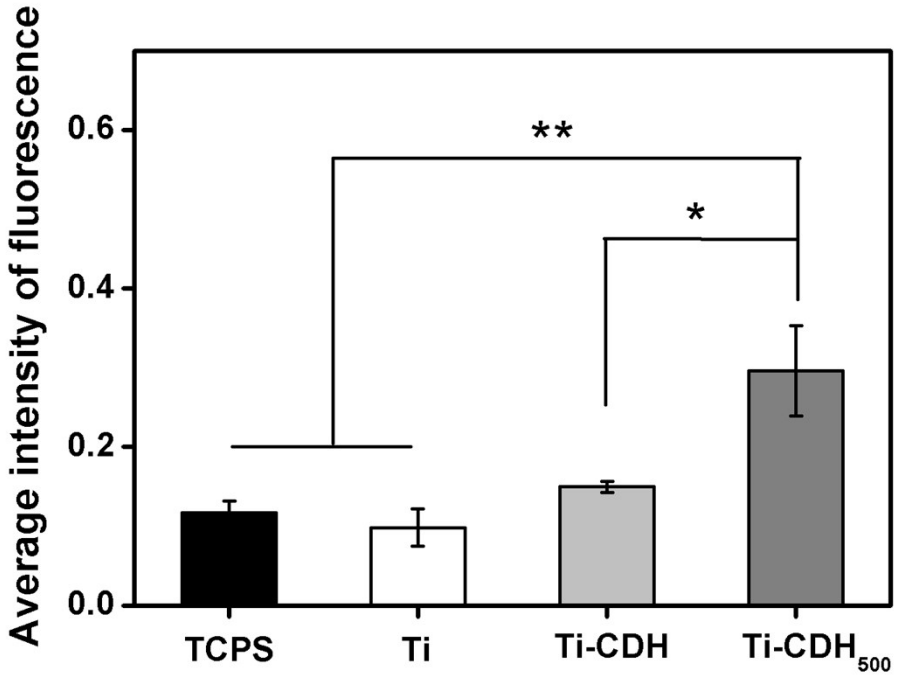

Fig. S3. Average intensity of fluorescence statistics. Error bars represent means ± SD, n=3, *$p < 0.05$, **$p<0.01$.

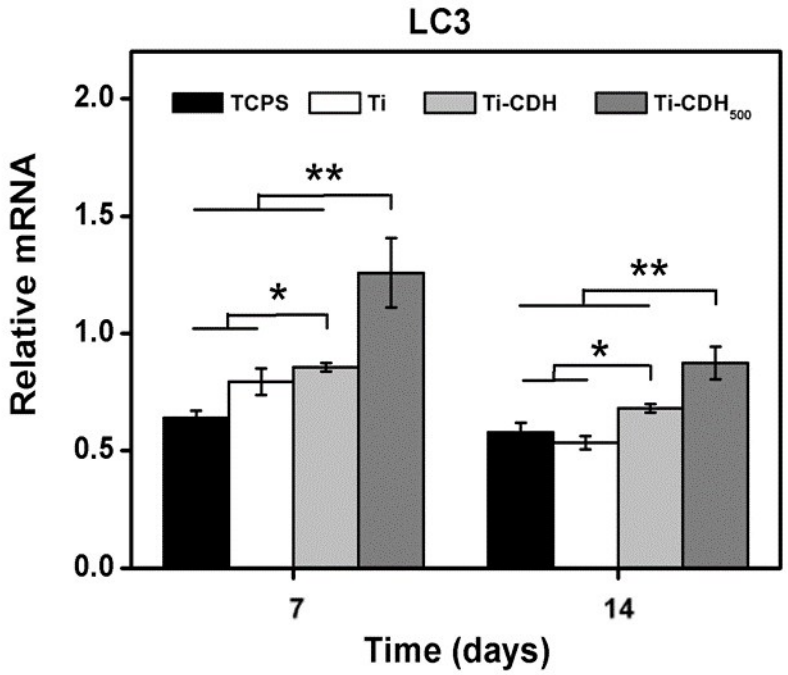

Fig. S4. Relative mRNA expression of several auotophagic related genes (LC3) in MSCs treated by various samples for 7 and 14 days, respectively. Error bars represent means ± SD, n=3, *p < 0.05, **p < 0.01.

Table S1. Statistics of chemical compositions on the surface of different substrates.

Samples	***Elemental content (wt%)***				
	Ti	O	C	Sr	Ga
Ti	88.95	5.79	4.40	—	—
CDH	—	26.55	10.21	34.77	20.62
CDH_{500}	—	28.98	10.12	25.69	28.06

Table S2. Real-time polymerase chain reaction primers used in this study.

Target gene	*Primers*	*Product size (bp)*
ALP	AGCGACACGGACAAGAAGC	183
	GGCAAAGACCGCCACATC	
OPG	GCCCAGACGAGATTGAGAG	173
	CAGACTGTGGGTGACGGTT	
OPN	GACAGCAACGGGAAGACC	216
	CAGGCTGGCTTTGGAACT	
BMP2	AGATTGTTGGGGCACAAGGT	191
	CCTTCAGCAGGGAAACCGAT	
GAPDH	CATCCGTAAAGACCTCTATGCCAA	223
	C	
	ATGGAGCCACCGATCCACA	