

## **Osteoimmune reaction caused by novel silicocarnotite bioceramic promoting osteogenesis through MAPK pathway**

*Xianzhuo Han<sup>a,1</sup>, Fanyan Deng<sup>b,c,1</sup>, Rui Zhu<sup>a</sup>, Ke Li<sup>c</sup>, Shun Yang<sup>c</sup>, Liou Jin<sup>e</sup>, Congqin Ning<sup>b,\*</sup>, Xiujuan Shi<sup>a,d,\*</sup>, Yongming Li<sup>a,\*</sup>*

<sup>a</sup> Department of Orthodontics, School and Hospital of Stomatology, Shanghai Engineering Research Center of Tooth Restoration and Regeneration, Tongji University, Shanghai 200072, China.

<sup>b</sup> The Education Ministry Key Lab of Resource Chemistry and Shanghai Key Laboratory of Rare Earth Functional Materials, Shanghai Normal University, Shanghai 200234, China.

<sup>c</sup> State Key Laboratory of High Performance Ceramics and Superfine Microstructure, Institute of Ceramics, Chinese Academy of Sciences, Shanghai 200050, China

<sup>d</sup> School of Medicine, Tongji University, Shanghai 200092, China.

<sup>e</sup> Department of Maxillofacial Surgery, Hospital of Stomatology, Jilin University, Changchun 130021, Jilin Province, China.

<sup>1</sup> Xianzhuo Han and Fanyan Deng contributed equally to the article.

\* Congqin Ning, Xiujuan Shi and Yongming Li are corresponding authors.

E-mail addresses: cqning@shnu.edu.cn (C.Q. Ning), xiujuansh@tongji.edu.cn (X.J. Shi), liyongming@tongji.edu.cn (Y.M. Li).

Supplementary Table 1 Primers used in the qRT-PCR test of RAW 264.7 cells

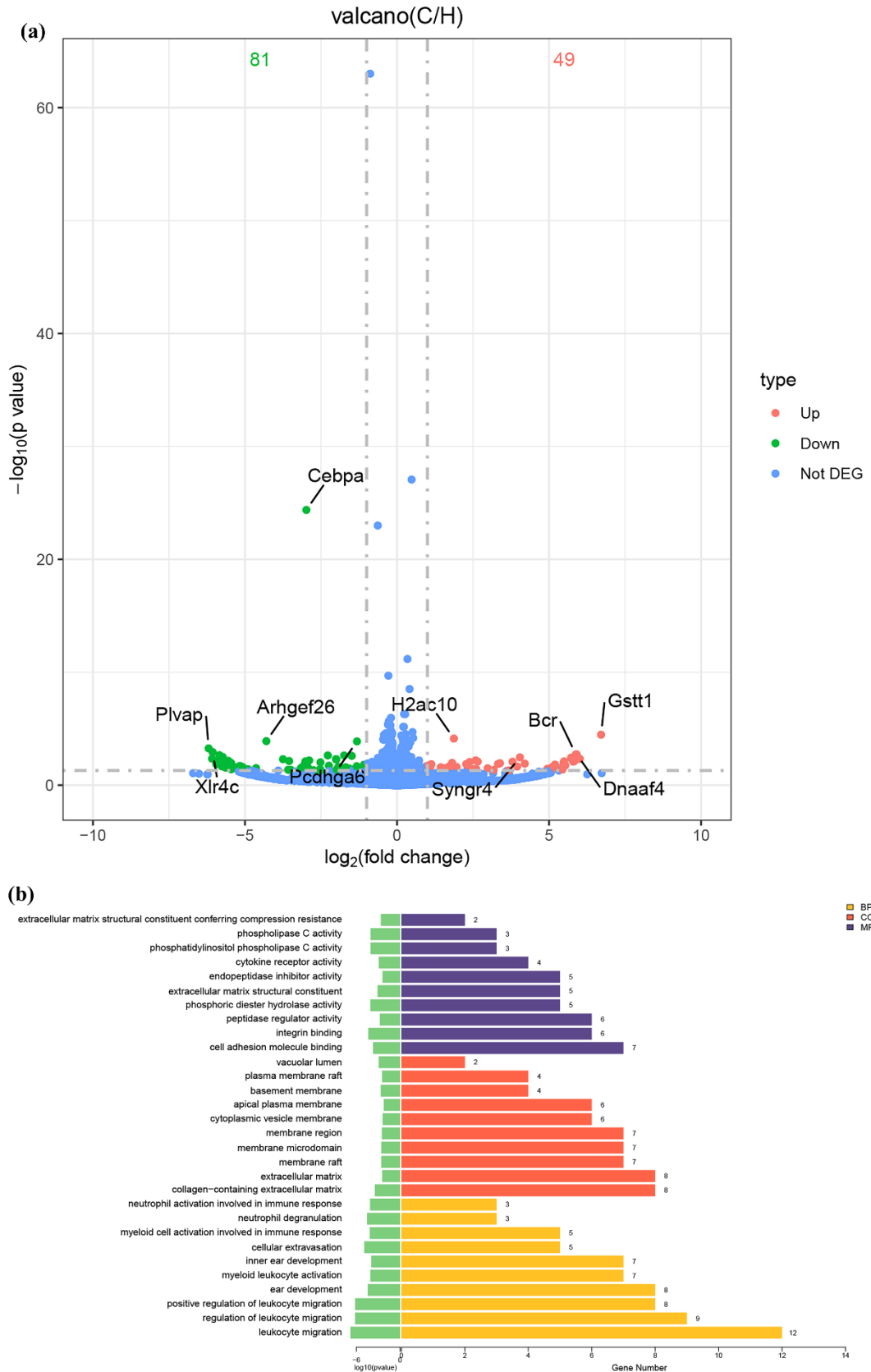
<b>Gene</b>	<b>Primer' sequences (5' to 3')</b>
GAPDH	F:AGGTCGGTGTGAACGGATTTG R:TGTAGACCATGTAGTTGAGGTCA
CD80	F:TCAGTTGATGCAGGATACACCA R: AAAGACGAATCAGCAGCACAA
TNF- $\alpha$	F:CAGGCGGTGCCTATGTCTC R: CGATCACCCCGAAGTTCAGTAG
CD206	F:CTCTGTTTCAGCTATTGGACGC R:TGGCACTCCCAAACATAATTTGA
IL-4	F:CCCCAGCTAGTTGTCATCCTG R: CAAGTGATTTTTGTTCGCATCCG
ARG-1	F:CCAGATGTACCAGGATTCTC R: AGCAGGTAGCTGAAGGTCTC
IL-10	F:ACTCTTCACCTGCTCCACTG R: GCTATGCTGCCTGCTCTTAC
IL-1 $\beta$	F:TGGAGAGTGTGGATCCCAAG R: GGTGCTGATGTACCAGTTGG

Supplementary Table 2 Primers used in the qRT-PCR test of rBMSCs cells

<b>Gene</b>	<b>Primer' sequences (5' to 3')</b>
$\beta$ -actin	GTAAAGACCTCTATGCCAACA GGACTCATCGTACTCCTGCT

BSP	CAGGACTGCCGAAGGAAGAAA GGCCGGTACTTAAAGACCCC
COL1	CTGCCAGAAGAATATGTATCACC GAAGCAAAGTTTCCTCCAAGACC
ALP	TATGTCTGGAACCGCACTGAAC CACTAGCAAGAAGAAGCCTTTGG
OCN	GCCCTGACTGCATTCTGCCTCT TCACCACCTTACTGCCCTCCTG
SP7	CAGTAATCTTCGTGCCAGACCT TAGTGAGCTTCTTCCTGGGGA
RUNX2	GCGGTGCAAACCTTCTCCAG TCACTGCACTGAAGAGGCTG

---



Supplementary Fig. 1. (a) Volcano plot and (b) Barplot of GO biological process (BP), cellular components (CC), molecular function (MF) terms.