

Bone marrow mesenchymal stem cells protect against *n*-hexane-induced neuropathy through beclin 1-independent inhibition of autophagy

Jie Hao^{1*}, Shuangyue Li^{1*}, Xiaoxia Shi^{1*}, Zhiqiang Qian¹, Yijie Sun¹, Dunjia Wang¹, Xueying Zhou¹, Hongxin Qu¹, Shuhai Hu², Enjun Zuo², Cong Zhang³, Liyan Hou¹, Qingshan Wang^{1†}, Fengyuan Piao^{1†}

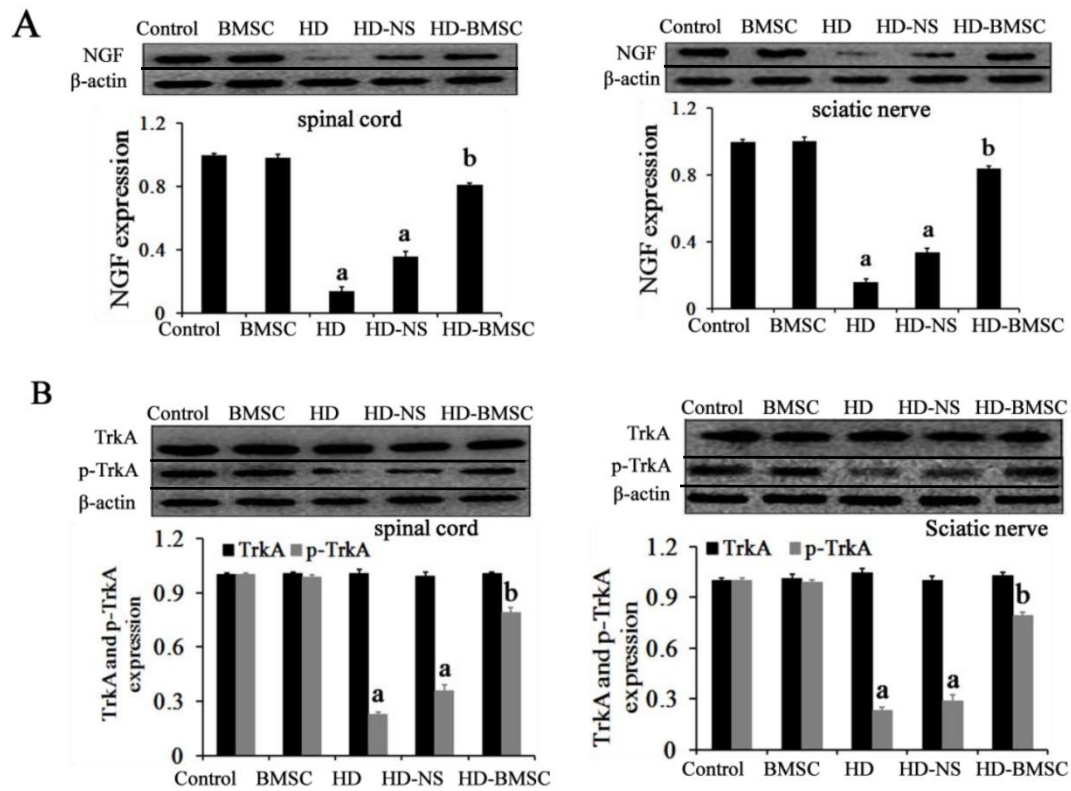
¹ Department of Occupational and Environmental Health, Dalian Medical University, Dalian, Liaoning 116044, China

² College of Stomatology, Dalian Medical University, Dalian, Liaoning 116044, China

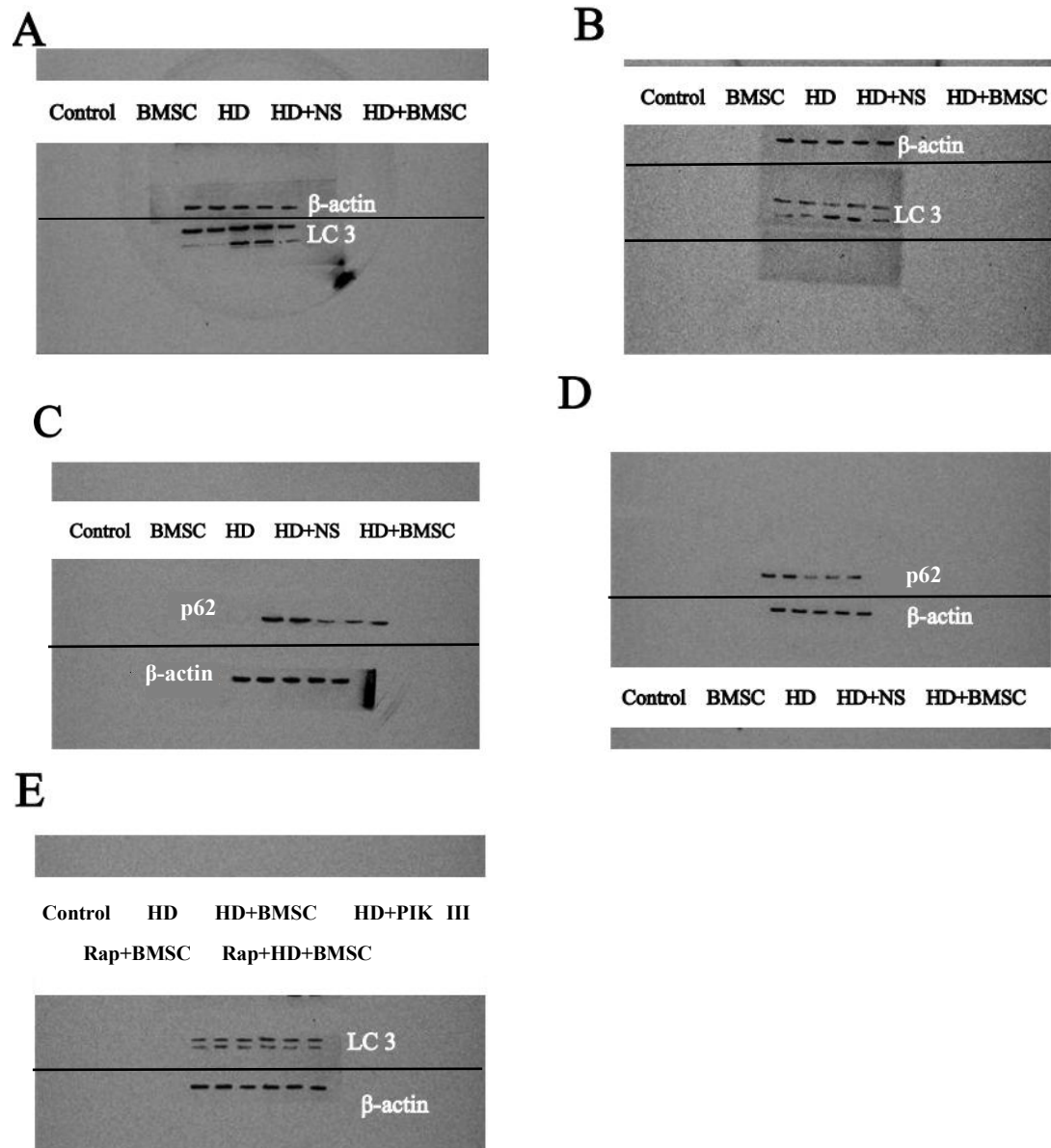
³ Department of Nutrition and Food Safety, Dalian Medical University, Dalian, Liaoning 116044, China

*Jie Hao, Shuangyue Li and Xiaoxia Shi as co-first authors contributed equally to this work.

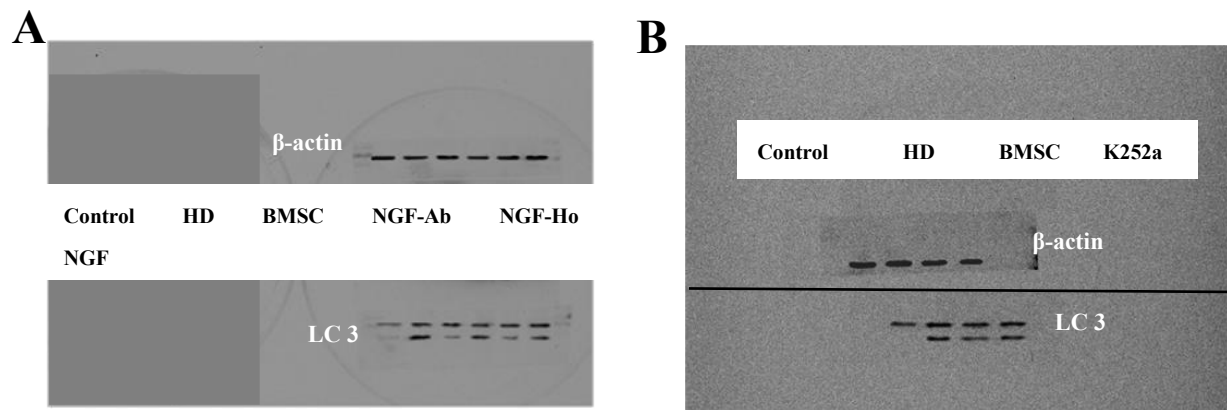
†Corresponding authors: Fengyuan Piao, E-mail: piaofengyuan353@163.com; Co-corresponding authors: Qingshan Wang, E-mail: wangq4@126.com



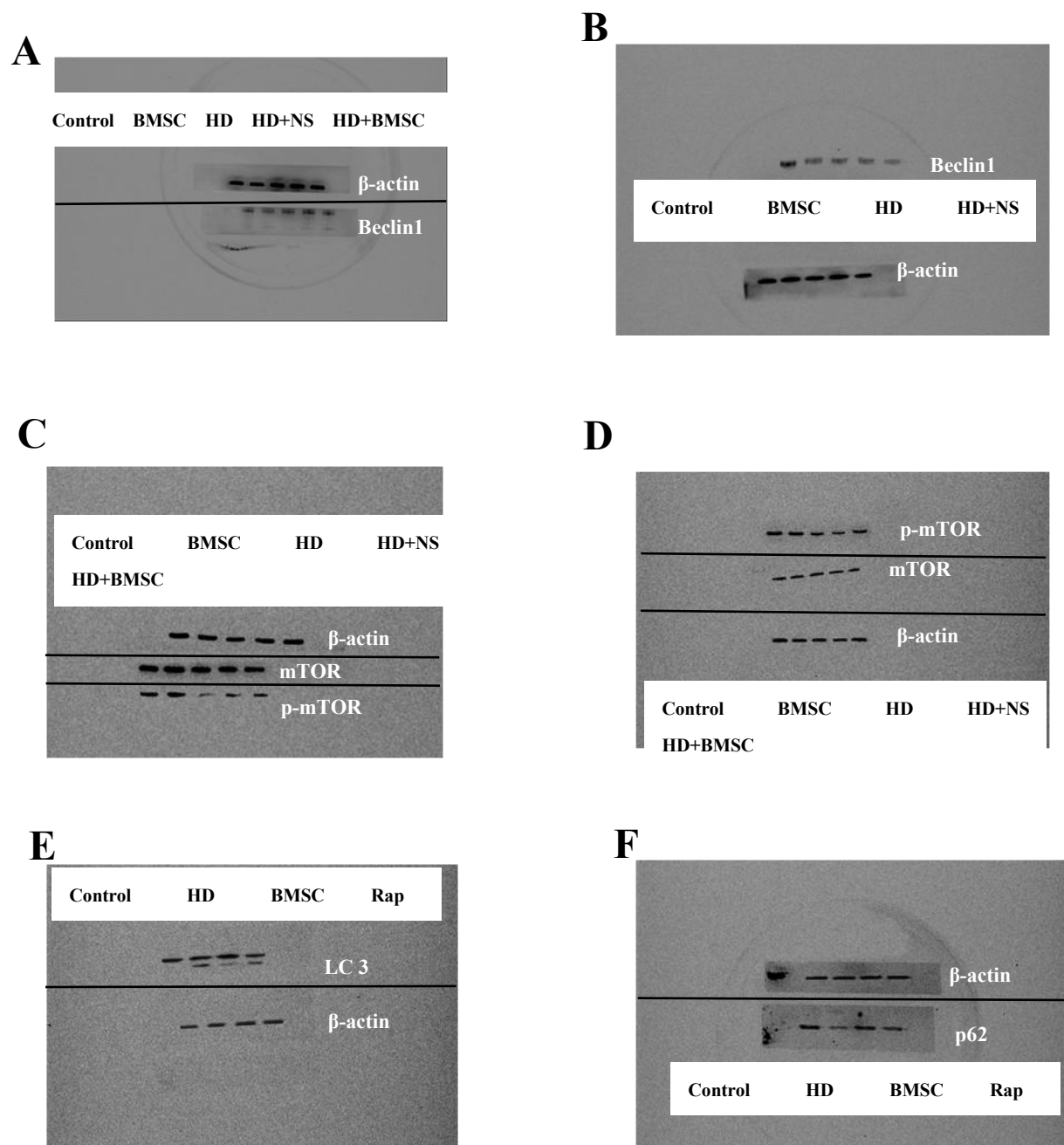
Supplementary Figure S1. BMSC graft elevates the level of NGF in the spinal cord and sciatic nerve of HD-intoxicated rats. A, The protein level of NGF was assayed by western blot and the density of blots was quantified (the full-length gels were shown in Supplementary Figure 6A, 6B). B, The levels of TrkA and p-TrkA by western blot and the density of blots was quantified (the full-length gels were shown in Supplementary Figure 6C, 6D). ^a $p < 0.05$, compared with control group; ^b $p < 0.05$, compared with HD group; ^c $p < 0.05$, compared with BMSC-CM group.



Supplementary Figure S2. The full-length gels for Figure 1. A,B, The full-length Western blot gels of LC3 and its β -actin in spinal cord (A) and sciatic nerve (B) of HD-intoxicated rats with or without BMSC transplantation. C,D, The full-length Western blot gels of p62 and its β -actin in spinal cord (C) and sciatic nerve (D) of HD-intoxicated rats with or without BMSC transplantation. E, The full-length Western blot gels of LC3 and β -actin in HD-intoxicated VSC4.1s with autophagy inhibitor PIKIII or autophagy activator Rap.

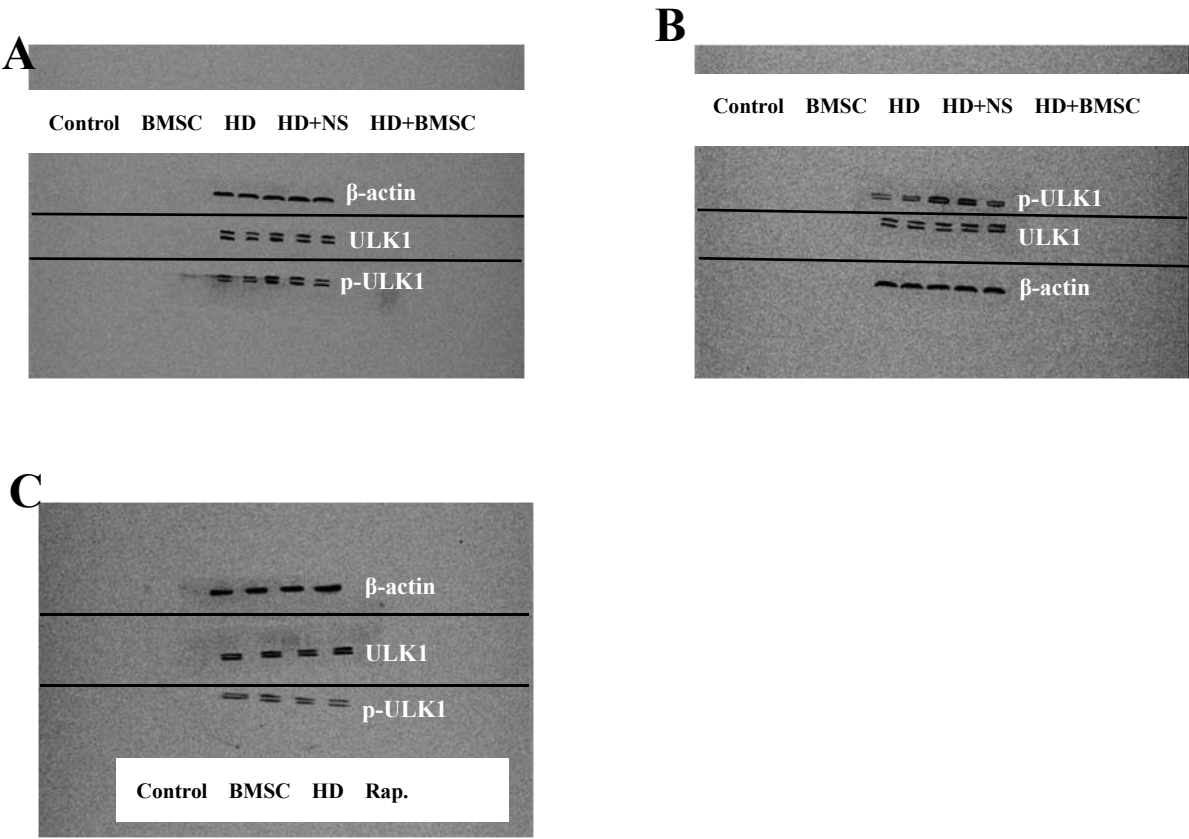


Supplementary Figure S3. The full-length gels for Figure 2. A, The full-length Western blot gels of LC3 and its β -actin in HD-intoxicated VSC4.1 cells with NGF-Ab or NGF. B, The full-length Western blot gels of LC3 and its β -actin in HD-intoxicated VSC4.1 cells with or without K252a.

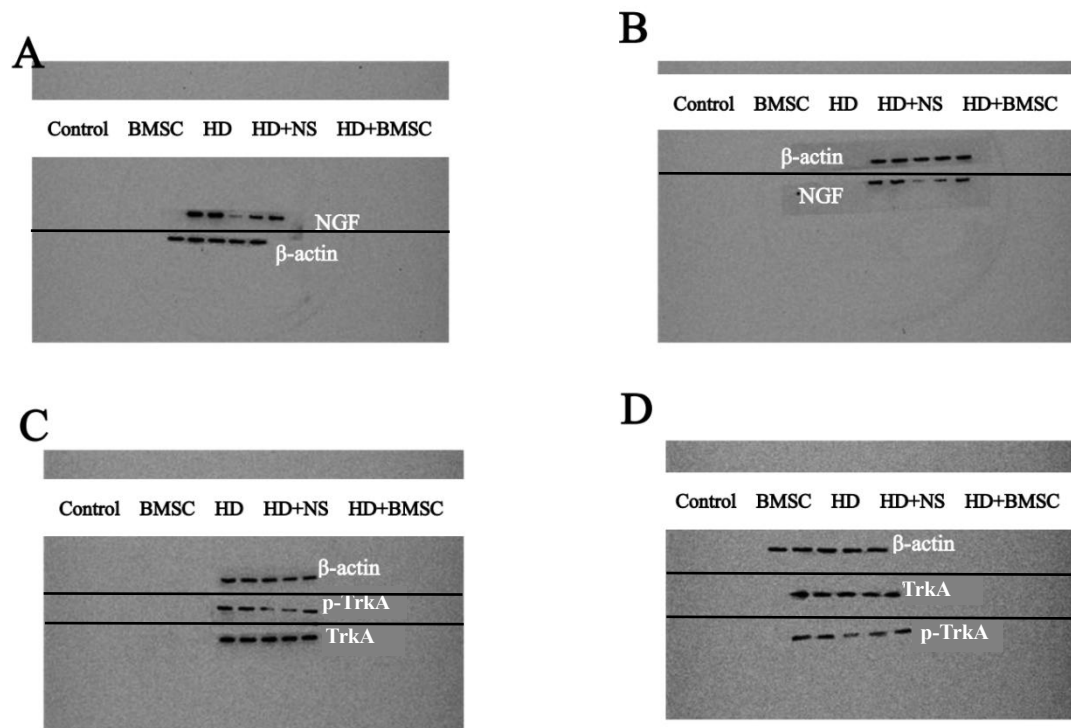


Supplementary Figure S4. The full-length gels for Figure 3. A,B, The full-length Western blot gels of Beclin1 and its β-actin in spinal cord (A) and sciatic nerve (B) of HD-intoxicated rats with or without BMSC transplantation. C,D, The full-length Western blot gels of mTOR, p-mTOR and its β-actin in spinal cord (C) and sciatic nerve (D) of HD-intoxicated rats with or without BMSC transplantation. E, F, The

full-length Western blot gels of LC3 (E), P62(F) and its β -actin in HD-intoxicated VSC4.1 cells with or without Rap.



Supplementary Figure S5. The full-length gels for Figure 4. A,B, The full-length Western blot gels of ULK1, p-ULK-1 and its β -actin in spinal cord (A) and sciatic nerve (B) of HD-intoxicated rats with or without BMSC transplantation. C, The full-length Western blot gels of ULK1, p-ULK-1 and its β -actin in HD-intoxicated VSC4.1s with or without Rap.



Supplementary Figure S6. The full-length gels for Figure S1. A,B, The full-length Western blot gels of NGF and its β -actin in spinal cord (A) and sciatic nerve (B) of HD-intoxicated rats with or without BMSC transplantation. C,D, The full-length Western blot gels of TrkA, p-TrkA and its β -actin in spinal cord (C) and sciatic nerve (D) of HD-intoxicated rats with or without BMSC transplantation.