

Ibuprofen rescues abnormalities in periodontal tissues in conditional presenilin 1 and presenilin 2 double knockout mice

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We used forebrain-specific conditional presenilin 1 (PS1) and presenilin 2 (PS2) double knockout mice (dKO mice), which exhibit symptoms of neurodegenerative diseases, especially Alzheimer's disease to investigate whether ibuprofen could rescue the abnormalities in the brain and periodontal tissues by attenuating the inflammatory response. Mandibles were dissected for alveolar bone height analysis. Maxillae were fixed and decalcified for histological observation and osteoclast detection. The gingiva of the mandibular incisor teeth, hippocampus and cortex were used to assay inflammatory mediators by ELISA measurements. We confirmed periodontal tissues abnormalities and inflammatory responses in brain and periodontal tissues in naïve 9- and 12-month-old dKO mice. The other two groups of age-matched dKO mice which received 375 ppm ibuprofen treatment for consecutive 6 months exhibited significantly attenuation of damage in periodontal tissues and reduction in several inflammation-related factors in brain and periodontal tissues. Our findings showed that the anti-inflammatory drug ibuprofen could significantly decrease the inflammation through cyclooxygenase (COX) pathway in brain and periodontal tissues in dKO mice, and then attenuates abnormalities in periodontal tissues. It suggested that ibuprofen could be an ideal drug to prevent both neural system and periodontal tissues from damage which caused by inflammatory response.

Biography

Jiansheng Su has completed his Ph.D. at the age of 35 years from Tongji University School of Stomatology. He is the professor of Tongji University School of Stomatology. He has published more than 10 papers in reputed journals and has been serving as an editorial board member of reputed.

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