Zhengguo Cao, DDS, PhD
Chair and Professor
Department of Periodontology
Key Laboratory for Oral Biomedical Engineering of Ministry of Education
School of Stomatology, Wuhan University, China

“Role of CyPA/EMMPRIN/MMP in the pathogenic mechanism of Periodontitis and Regulation of Osx and miRNA on the differentiation of cementoblast”

MMPs play a very important role in destruction of periodontal connective tissue. EMMPRIN, an extracellular matrix metalloproteinase production inducer, and also a signaling receptor of cyclophilin A (CypA). This ligand-receptor interaction contributes to the regulation of inflammatory response and MMPs production. Using experimental Periodontitis models in rats, we have evaluated the role of CyPA/EMMPRIN/MMPs pathway during the destruction of periodontal tissue. We have additionally utilized anti EMMPRIN antibody to block the interaction of cypA and EMMPRIN to assess the efficacy of this on regulation of periodontal inflammation.

A second area of research is investigating whether the osteoblast transcription factor osterix (critical for bone formation), regulates the development of cementum. As Epigenetics is also a very important determinant of cell differentiation, we are also investigating if miRNA might be involved in regulating the differentiation of cementoblast.

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