BioPulp: A system for replacing and re-growing damaged dental tissue

Technology #cu13329

Americans undergo 15.1 million root canals each year. This painful and invasive procedure is currently the most effective treatment for treating infected or decaying teeth caused by infected nerves or damaged dental pulp. However, root canal treated teeth may be brittle, and are susceptible to fracture and discoloration over time. Furthermore, root canal treatment is unsuitable for immature teeth in most cases. Thus, there is an unmet need for an alternative treatment to replace the injured dental pulp. This technology, BioPulp, provides a system of biomaterials and growth factors capable of replacing decayed teeth without the need for brittle, breakage-prone dental implants. By attracting and growing a patient’s own cells, BioPulp can help the body to regenerate dead dental tissue on its own.

Re-growing dental pulp and dentin provides better, more durable outcomes than root canals

The technology establishes methods of generating biologically viable tissue in root canal treated teeth to replace the diseased dental pulp. Instead of directly delivering living cells, the technology uses FDA approved biomaterials delivering bioactive factors to promote formation of viable tissue. Replacement of dental pulp with biologically active tissue may reduce the common long term complications of root canal operations and may render this technique available for treatment of baby teeth.

Lead Inventor:

Jeremy J. Mao, DDS, PhD

Applications:

- An alternative treatment for dental pulp, allowing retention and/or regeneration of the viability of the tooth pulp, instead of generating a de-vitalized tooth using gutta-percha.
- An alternative to root canal or capping procedures performed on baby teeth.
Advantages:

• The bioactive ingredient present in matrix, material or scaffold effectively promotes angiogenic, odontogenic, fibrogenic or neurogenic development.
• The composition does not comprise a living cell during the capping or filling.
• Delivery of biologically compatible materials can be less time consuming or technically sensitive than current root canal treatment.

Patent Information:

Patent Pending ([US20110171607](https://www.google.com/search?q=US20110171607))

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Inventors

Jeremy Mao