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Molecule in human saliva has potential for wound healing

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A study published online in The *FASEB Journal* delves into the mystifying fact that wounds in your mouth heal faster and more efficiently than wounds elsewhere. Until now, it was understood that saliva played a part in the wound healing process, though the extent of its role was unknown. The study examined the effects of salivary peptide histatin-1 on angiogenesis (blood vessel formation), which is critical to the efficiency of wound healing. Researchers found that histatin-1 promotes angiogenesis, as well as cell adhesion and migration.

"These findings open new alternatives to better understand the biology underlying the differences between oral and skin wound healing," said Vicente A. Torres, Ph.D., associate professor at the Institute for Research in Dental Sciences within the Faculty of Dentistry at the University of Chile in Santiago, Chile. "We believe that the study could help the design of better approaches to improve wound healing in tissues other than the mouth."

The study involved experiments at three levels: (1) endothelial, or blood vessel-forming, cells in culture, (2) chicken embryos as animal models, and (3) saliva samples obtained from healthy donors. Using these three models, histatin-1 and saliva were found to increase blood vessel formation. Researchers are now taking the next step in this line of study—using these molecules to generate materials and implants to aid in wound healing.

"The clear results of the present study open a wide door to a therapeutic

advance. They also bring to mind the possible meaning of animals, and often children, 'licking their wounds,'" said Thoru Pederson, Ph.D., Editor-in-Chief of *The FASEB Journal*.

More information: Pedro Torres et al. The salivary peptide histatin-1 promotes endothelial cell adhesion, migration, and angiogenesis, *The FASEB Journal* (2017). DOI: 10.1096/fj.201700085R

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