other wounds in rabbits and pigs. Recombinant TGF-β1 and platelet-derived growth factor (PDGF) were applied to identical wounds in other pigs and rabbits in parallel experiments as additional controls.

RESULTS: In treated pig burn wounds, epithelialization was complete on d. 26 ± 2 (mean ± SD); control wounds were 70 ± 10% re-epithelialized by day 26 ($p < 0.001$). Contraction rate, collagen and fibronectin content, and scar volume were all significantly less in treated wounds. TGF-β1 and PDGF each retarded wound epithelialization.

CONCLUSIONS: Treatment of standard pig skin burn, pig skin excision, and rabbit skin excision wounds with synthetic TGF-β antagonist promoted epithelialization, reduced scarring, and slowed wound contraction. This agent may be useful in human wounds, particularly burns.

Detachment-induced apoptosis in the fibroblast-populated collagen matrix is modulated by p53

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INTRODUCTION: Detachment of the fibroblast-populated collagen matrix (FPCM) from its substratum induces apoptosis. Inhibition of p53 in monolayer fibroblasts prevents anoikis. We hypothesized that knockdown (RNAi) of p53 in the FPCM would diminish detachment-induced apoptosis.

METHODS: Human foreskin fibroblasts were incubated in attached collagen (bovine type I) matrices for 24 hr prior to transfection with a 21-mer RNA duplex against p53 (GACUCCAGUGGUAAUCUACUU); matrices were detached 72 hr after transfection, and then cytospin preps were processed with p53 immunohistochemistry and the TUNEL assay 24 hr after detachment. Data was analyzed with ANOVA and the unpaired t-test.

RESULTS: The results of the p53 immunohistochemistry (IHC) and TUNEL are given in the Table.

	p53 IHC (% positive)		TUNEL (% positive)	
Transfection	**attached**	**detached**	**attached**	**detached**
Nontransfection	3.2 ± 1.9	27.3 ± 4.4*	0.5 ± 0.7	10.7 ± 3.6*
Vehicle only	7.9 ± 5.0	26.0 ± 7.5*	1.7 ± 1.3	12.4 ± 2.1*
RNA duplex	8.4 ± 2.0**	15.0 ± 1.5*,**	5.0 ± 2.6**	4.7 ± 1.9**

Mean ± SD.
*$P < 0.05$ compared with attached.
†$P < 0.05$ compared with nontransfected.
IHC, immunohistochemistry.

CONCLUSIONS: FPCM detachment induces p53 expression and apoptosis; p53 can be partially knocked down in the FPCM with RNAi. Although vehicle toxicity cannot be ruled out, detachment-induced apoptosis is decreased by p53 RNAi. Detachment-induced apoptosis in the FPCM is mediated at least partially by p53.

A novel model for precise, accurate measurements of wound healing in mice

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INTRODUCTION: There currently are no rodent models that parallel human wound healing. Humans heal wounds through epithelialization and granulation, whereas rodents predominantly heal by contraction. We introduce a novel model of wound healing in mice that minimizes wound contraction, and allows for granulation and epithelialization.

METHODS: Two full-thickness wounds were created on the dorsum of C57/BL6 (n=23) and diabetic C57/BL-db/db mice (n=15). Silicone splints with a diameter two times that of the wound was centered around the wound, fixed with adhesive glue and nylon sutures, and covered with an occlusive dressing. Tissue was harvested on days 1, 3, 7, 10, 14, 21, 24 and compared to controls with no splint or dressing. Specimens were analyzed for area of granulation tissue and epithelial gap using image analysis software.

RESULTS: Reepithelialization was prolonged in the splinted C57/BL6 and C57/BL-db/db mice (10.7 d±0.58 vs. 7.33 d±0.58, $P<0.05$ and 22.3 d±1.86 vs. 16.1 d±1.79, $P<0.05$, respectively). Total area of granulation tissue was more abundant until day 7 in the C57/BL6 splinted mice (410%, $P<0.05$) and until day 10 in the C57/BL-db/db splinted mice (326%, $P<0.05$), after which point there was no difference.

CONCLUSIONS: Our findings show that splinting wounds in mice minimizes contraction and allows healing to occur by epithelialization and new granulation tissue. We have demonstrated its applicability in a model of normal and impaired wound healing. This model simulates human wound healing, is easily reproducible, and is cost effective. It is an appealing model to evaluate new pharmacologic or gene therapy-mediated treatments on wound healing.

Role of salivary VEGF in palatal wound repair

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INTRODUCTION: Large amounts of vascular endothelial growth factor (VEGF) and other growth factors are secreted by murine submandibular salivary glands (SMG). VEGF-induced angiogenesis is critical for timely cutaneous wound healing however, it has not been studied in the palate. We hypothesize that SMG resection will deplete salivary VEGF levels and impair palatal mucosal neovascularization and wound healing.