Figure 1. Chromatogram of TGF-Beta 3 'Wild-Type' on a Phenyl-Sepharose Column

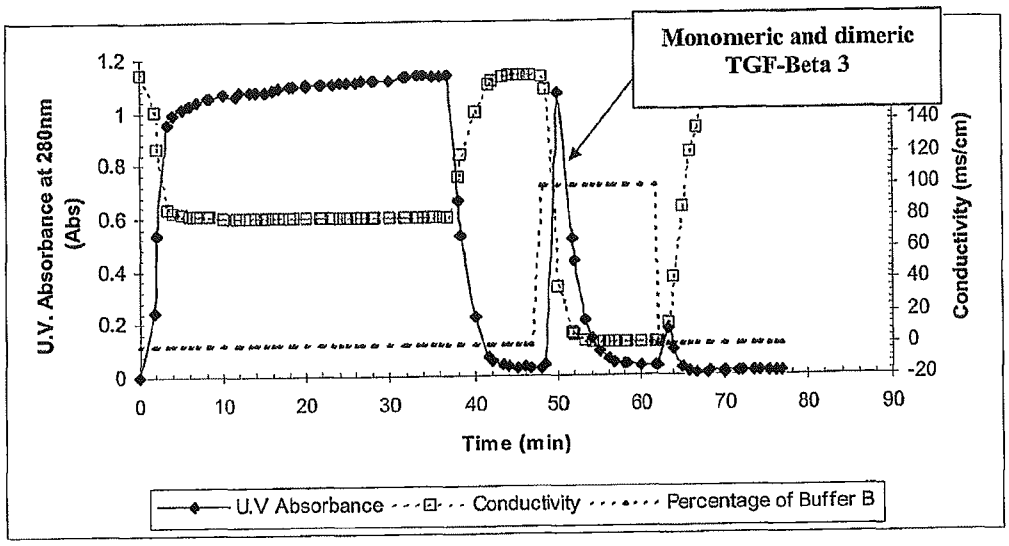


Figure 2. Chromatogram of TGF-Beta 3 'Wild-Type' Monomer and Dimer on UNO-S1 Column.

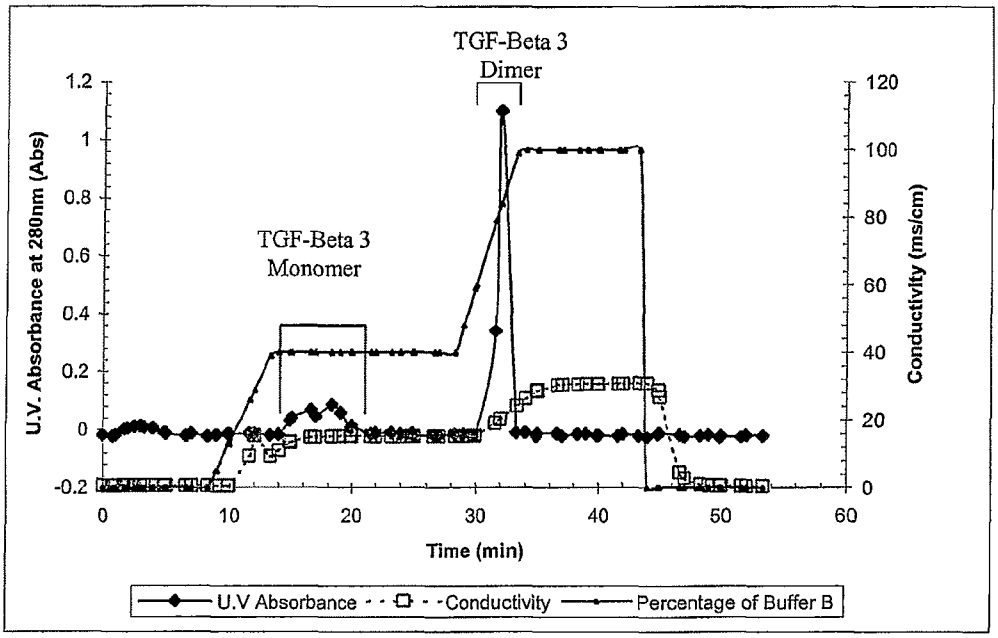


Figure 3. Comparison of TGF-Beta 3 Mutant Proteins and 'Wild-Type' TGF-Beta 3 by SDS-PAGE (Coomassie Blue stained)

Track	Sample	Concentration loaded per track
1	TGF-Beta 3 'Wild-Type'	3μg
2	Gly63-Ala	3μg*
3	Gly63-Pro	3μg*
4	Invitrogen Mark 12 molecular weight standards	10μl

* The buffer exchange of Gly63-Ala and Gly63-Pro mutant proteins resulted in some sample loss therefore the actual concentration added to the gel will be less than the 3μg stated.

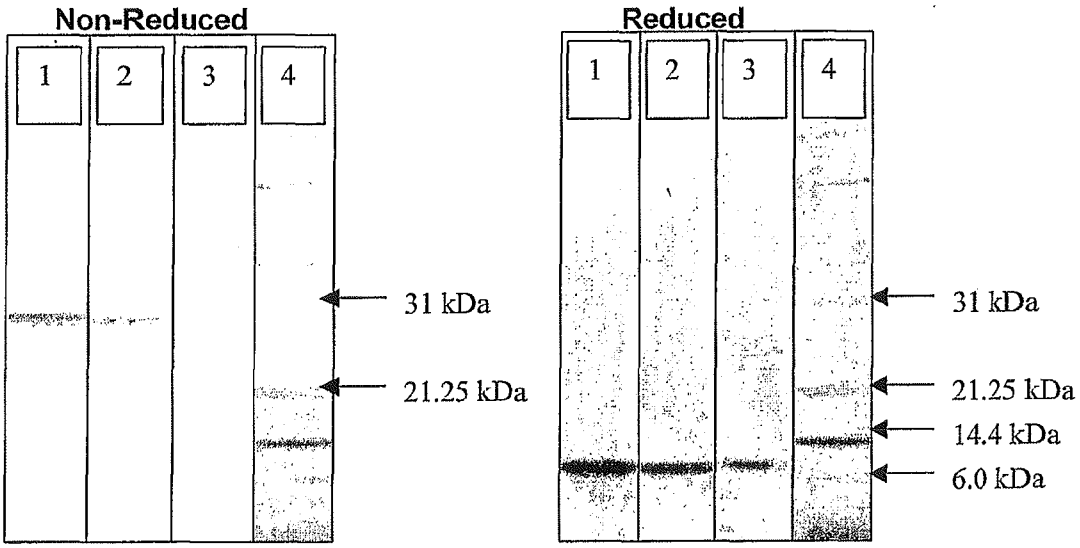


Figure 4. Template for Excisonal Wounding.

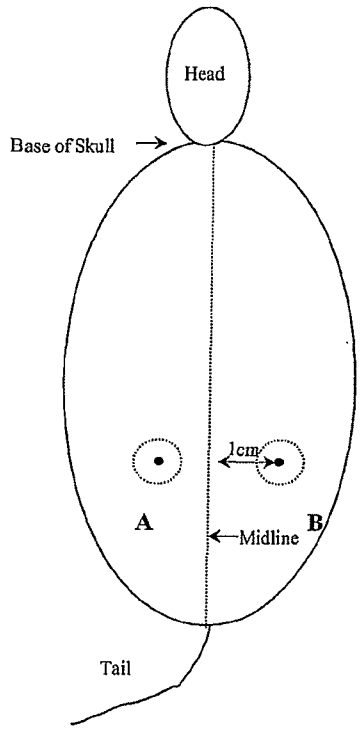
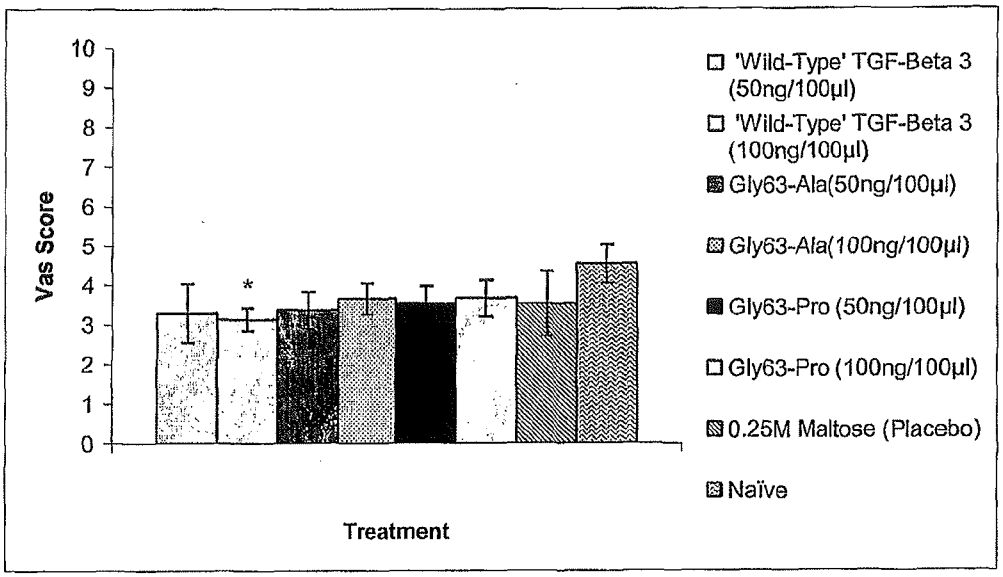


Figure 5. **Day 3 Average Macroscore for Incisional wounds (A and B) treated with TGF-Beta 3 Wild-type' and Mutant proteins.**



* Significantly increased healing compared to naïve wounds ($p<0.05$).

Figure 6. **Day 3 Microscopic Average Wound Width for Excisional wounds (C and D) Treated with 'Wild-type' and Mutant TGF-Beta 3 proteins.**

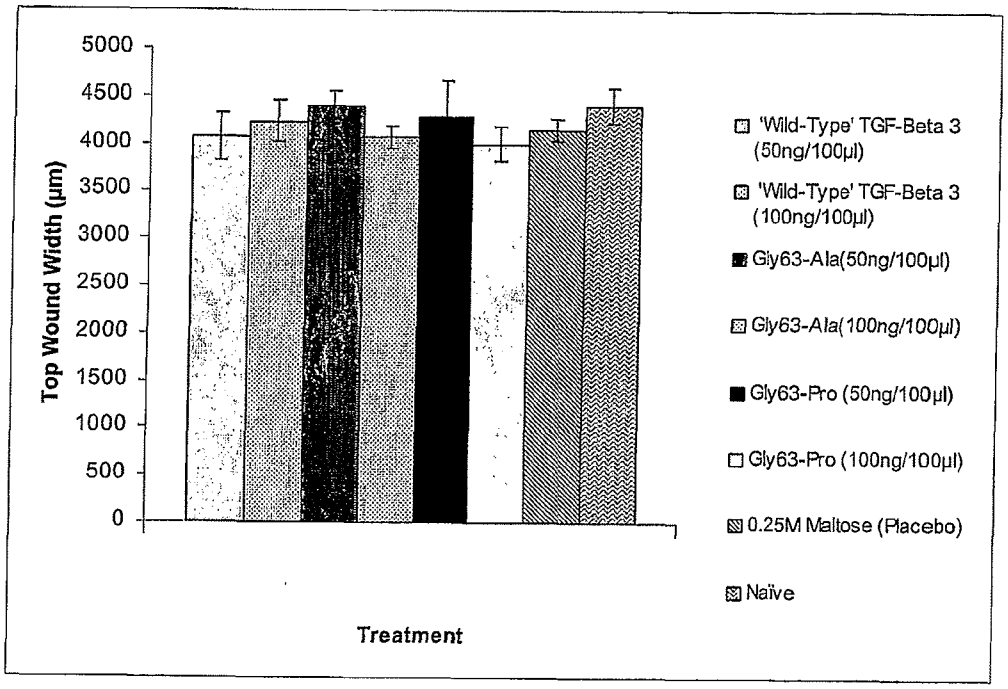


Figure 7. Template for Incisional Wounding.

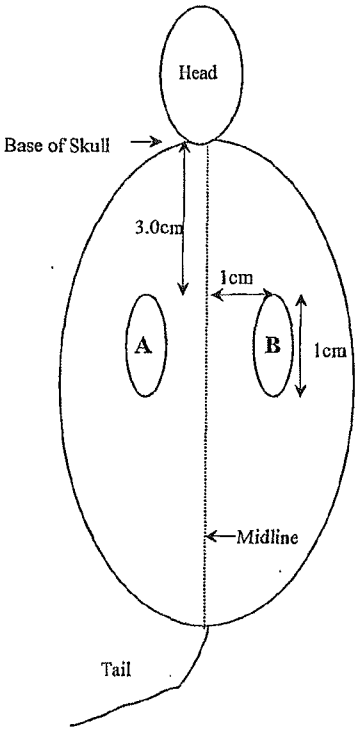
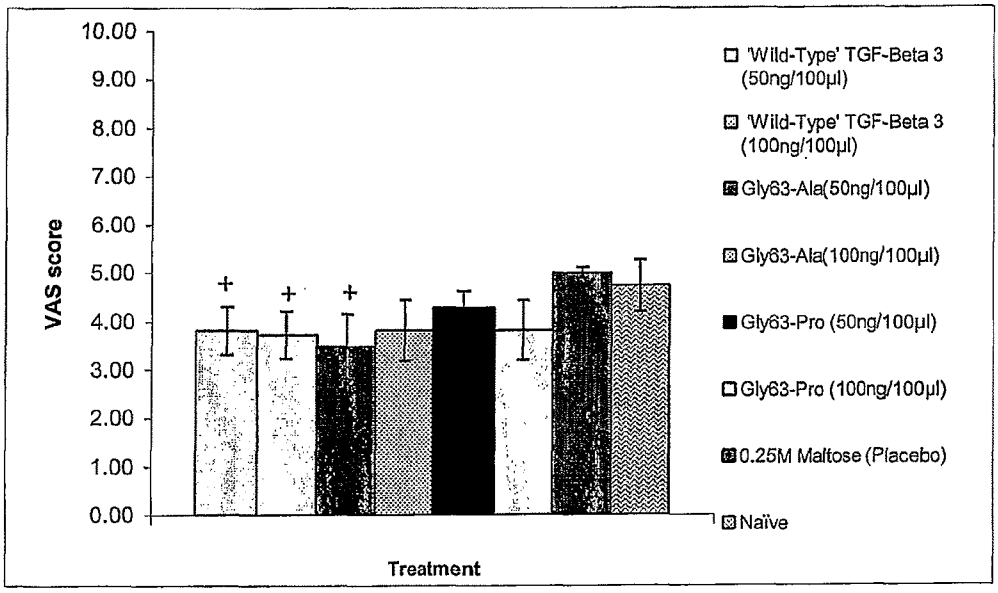


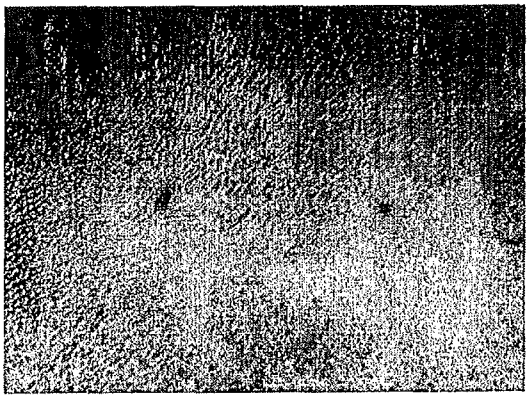
Figure 8. **Day 70 Average Macroscore for Incisional wounds (A and B) treated with 'Wild-type' and Mutant TGF-Beta 3 proteins.**



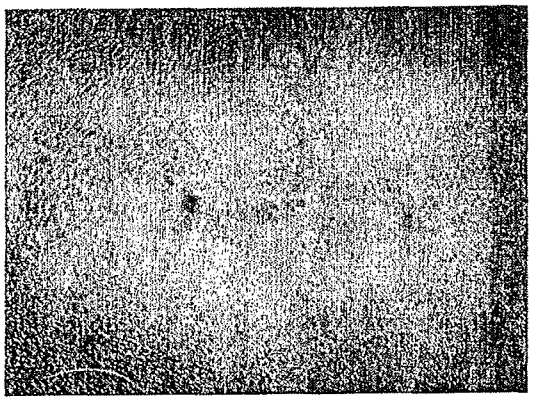
\+ Significantly decreased scarring compared to placebo treated wounds ($p<0.05$)

Figure 9. Representative Macroscopic Scar Images (70 days Post wounding)

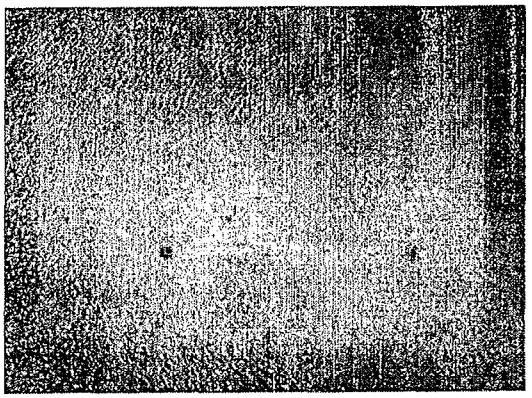
'Wild-Type' TGF-Beta 3 (50ng/100μL)



'Wild-Type' TGF-Beta 3 (100ng/100μL)



Gly63-Ala TGF-Beta 3 (50ng/100μL)



Gly63-Ala TGF-Beta 3 (100ng/100μL)

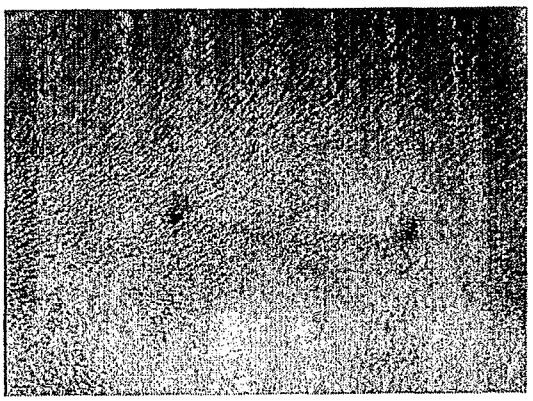
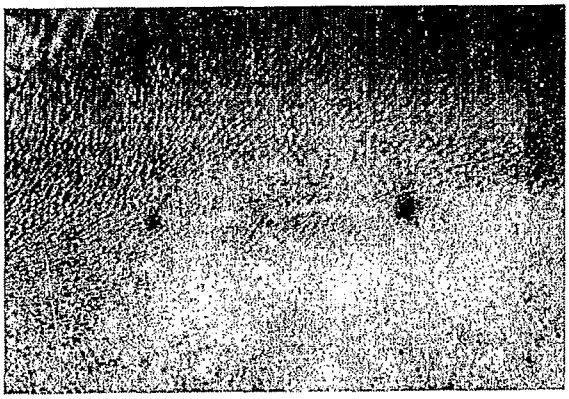
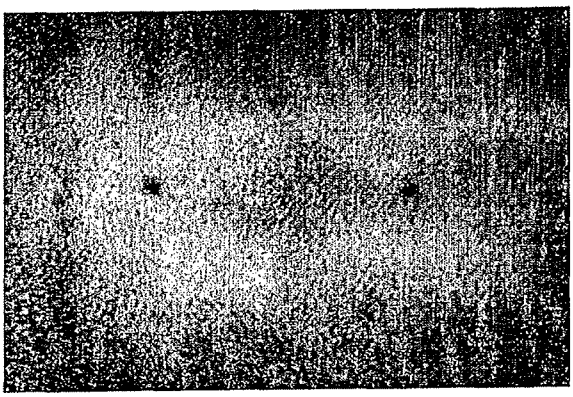


Figure 9. Representative Macroscopic Scar Images (70 days Post wounding) Cont'd

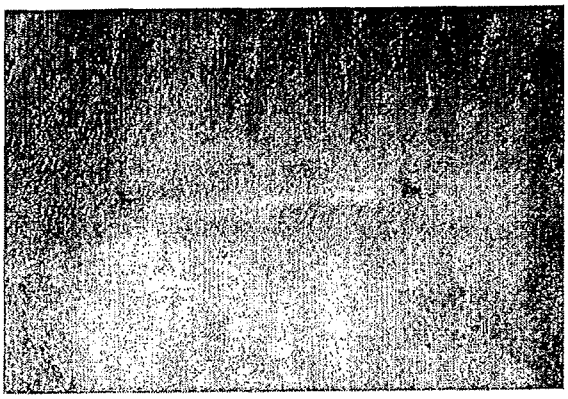
Gly63-Pro (50ng/100μL)



Gly63-Pro (100ng/100μL)



Placebo (0.25M Maltose)



Naïve

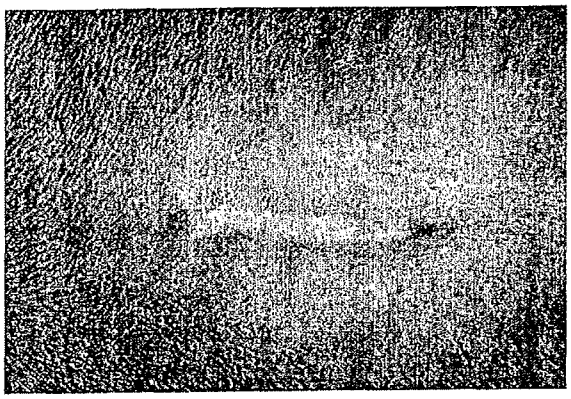
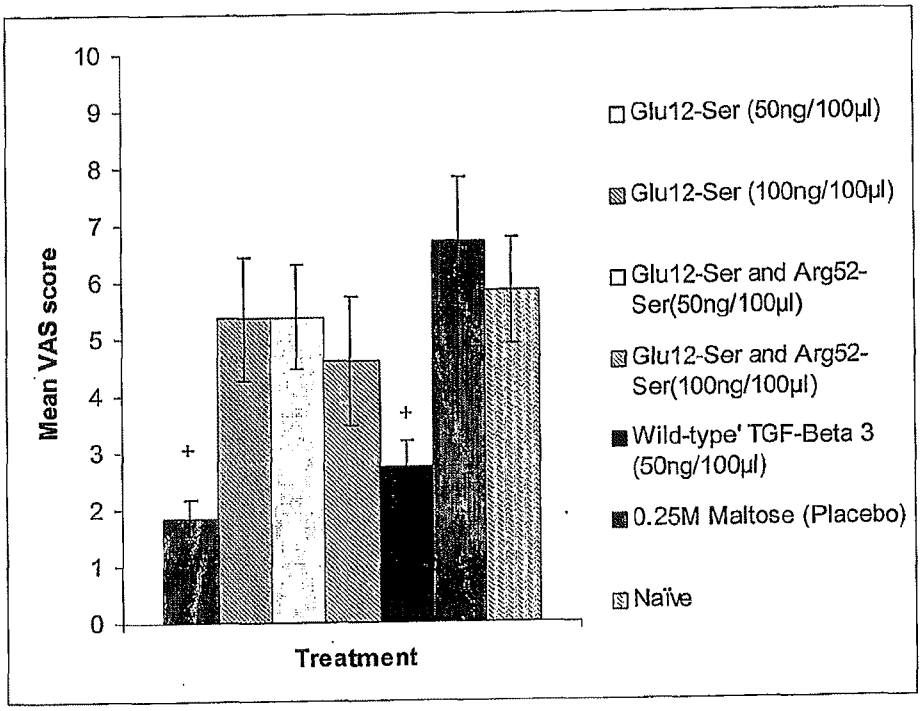


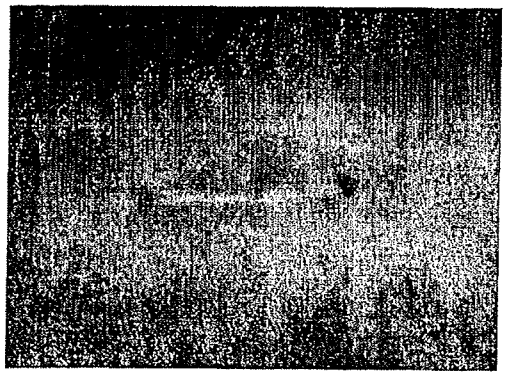
Figure 10. Day 70 Average Macroscore for Incisional wounds (A and B) treated with 'Wild-type' and Mutant TGF-Beta 3 proteins.



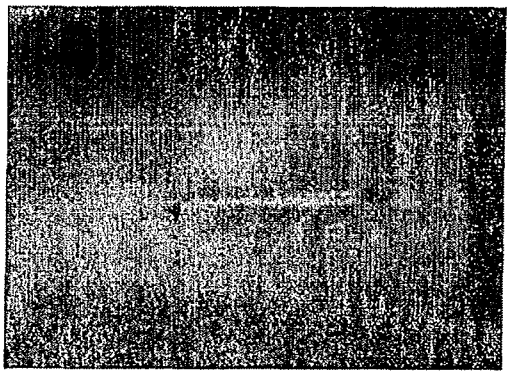
\+ Significantly decreased scarring compared to placebo treated wounds ($p<0.05$)

Figure 11. Representative Macroscopic Scar Images (70 days Post wounding)

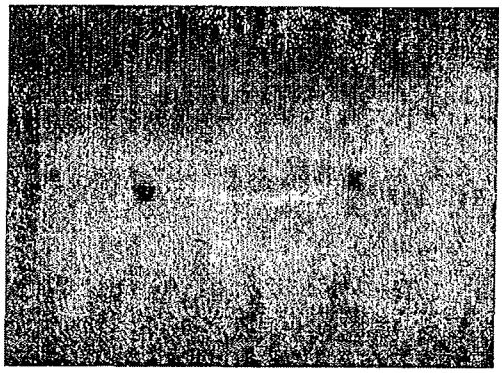
Glu12-Ser (50ng/100μL)



Glu12-Ser (100ng/100μL)



Glu12-Ser & Arg52-Ser (50ng/100μL)



Glu12-Ser & Arg52-Ser (100ng/100μL)

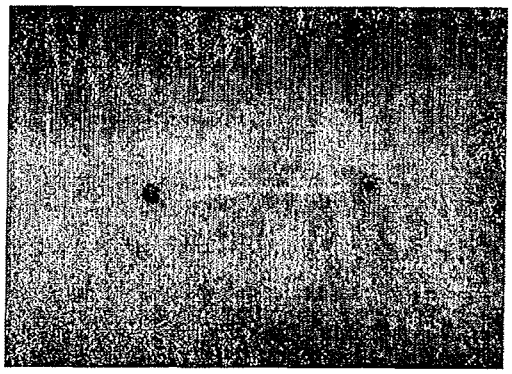
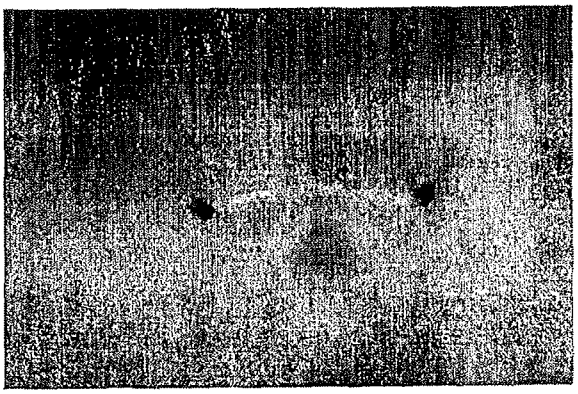
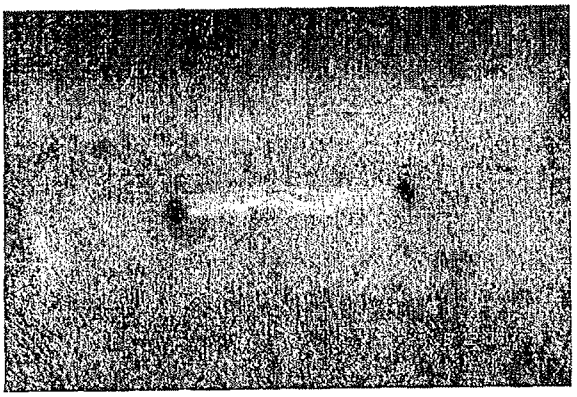


Figure 11. Representative Macroscopic Scar Images (70 days Post wounding) Cont'd

Wild-Type TGF-Beta 3(50ng/100μL)



Placebo (0.25M Maltose) Control



Naïve (Control)

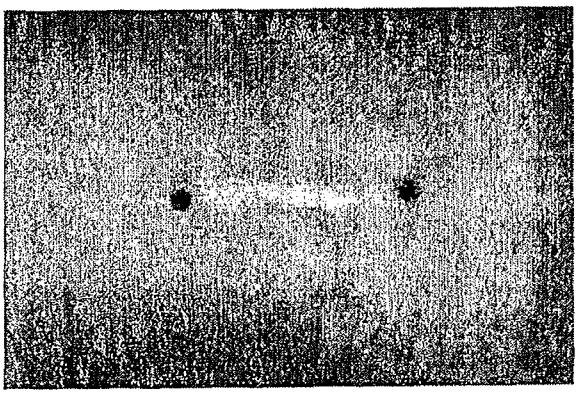
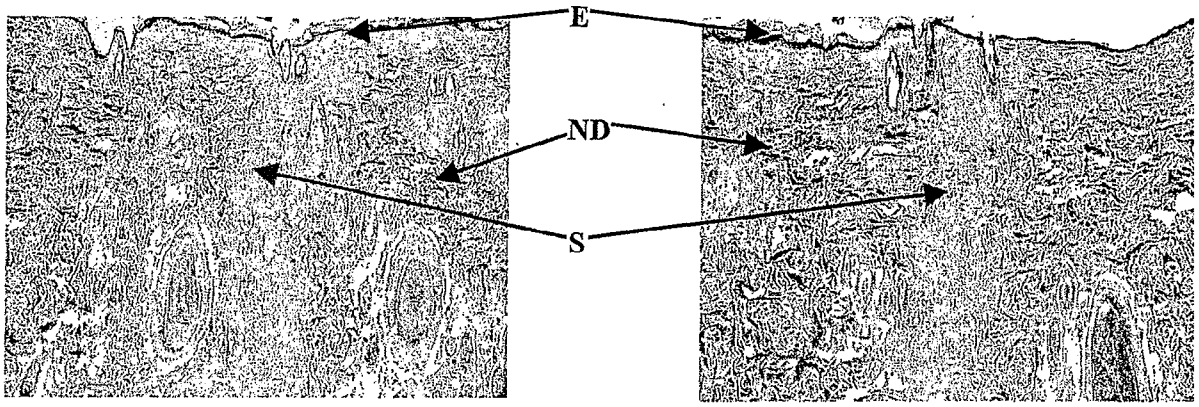


Figure 12. Representative Microscopic Scar Images of Wounds Treated with 'Wild-type' TGF-Beta 3, Gly63-Pro and Gly63-Ala Mutant Proteins (70 days Post-Wounding).

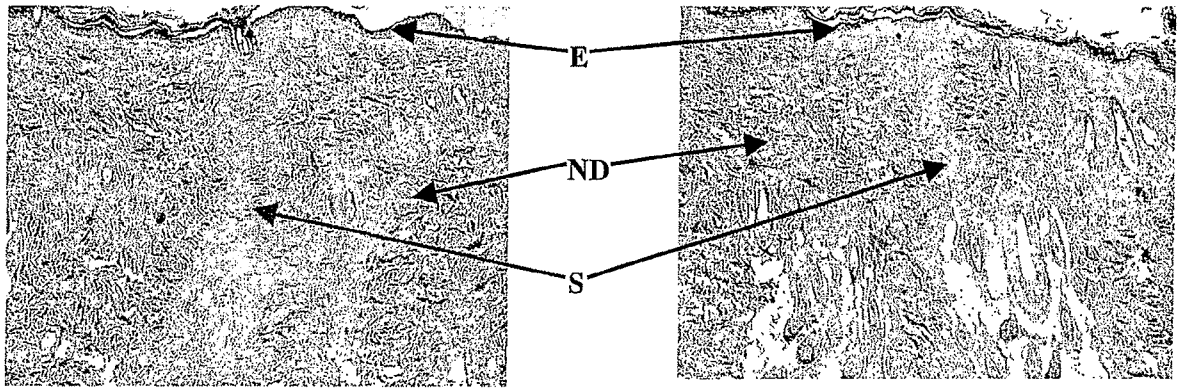
'Wild-type' TGF-Beta 3 (50ng/100μL)

'Wild-type' TGF-Beta 3 (100ng/100μL)



Gly63-Ala (50ng/100μL)

Gly63-Ala (100ng/100μL)



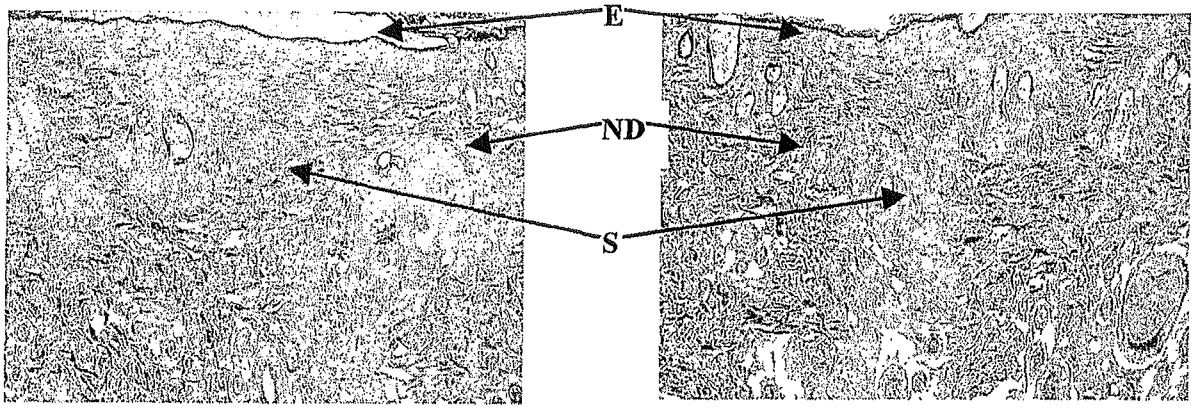
Key

E= Epidermis
ND= Normal Dermis
S= Scar

Figure 12. Representative Microscopic Scar Images of Wounds Treated with 'Wild-type' TGF-Beta 3, Gly63-Pro and Gly63-Ala Mutant Proteins (70 days Post-Wounding) Cont'd.

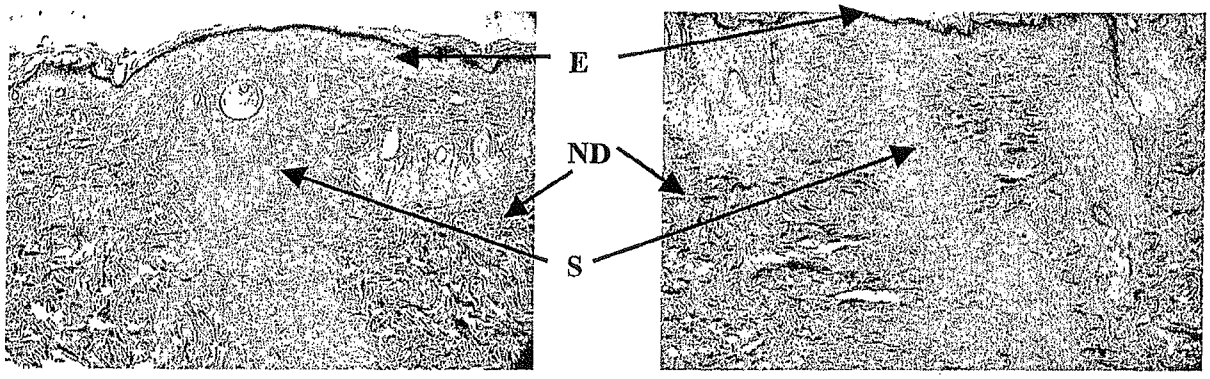
Gly63-Pro (50ng/100μL)

Gly63-Pro (100ng/100μL)



Naïve Control

Placebo (0.25M Maltose)



Key

E= Epidermis
ND= Normal Dermis
S= Scar

Figure 13. Representative Microscopic Scar Images of Wounds Treated with Glu12-Ser and Double Serine mutant (Glu12-Ser and Arg 52-Ser) after 70 days Post-Wounding).

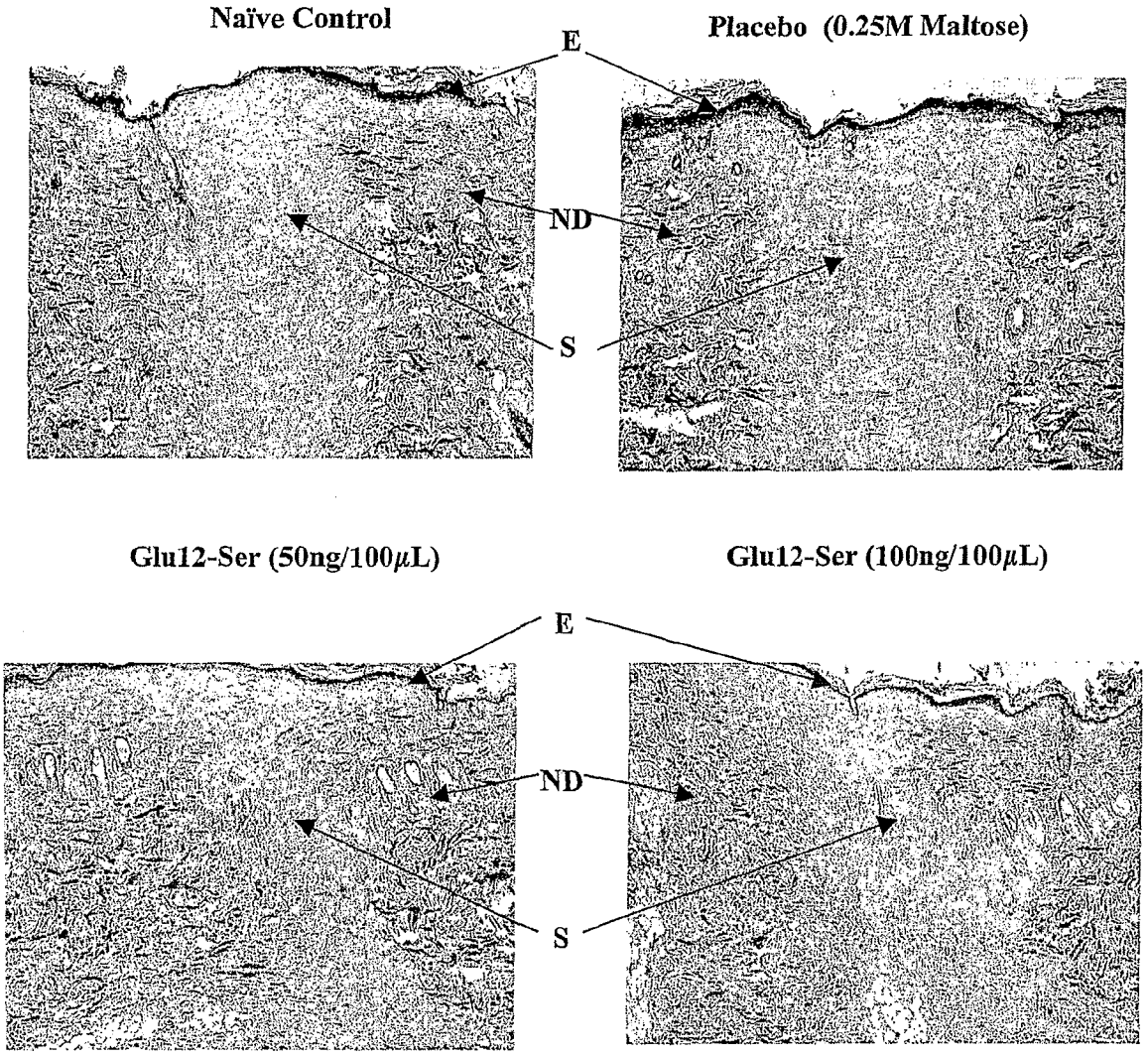
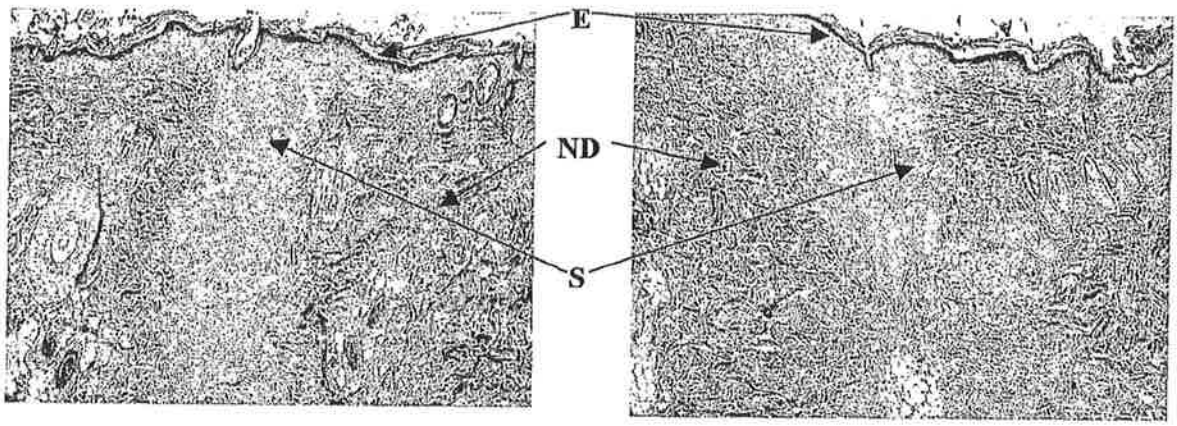


Figure 13. Representative Microscopic Scar Images of Wounds Treated with Glu12-Ser and Double Serine mutant (Glu12-Ser and Arg 52-Ser) after 70 days Post-Wounding) Cont'd

Double Serine Mutant (50ng/100μL)

Double Serine Mutant (100ng/100μL)



Key

E= Epidermis
ND= Normal Dermis
S= Scar