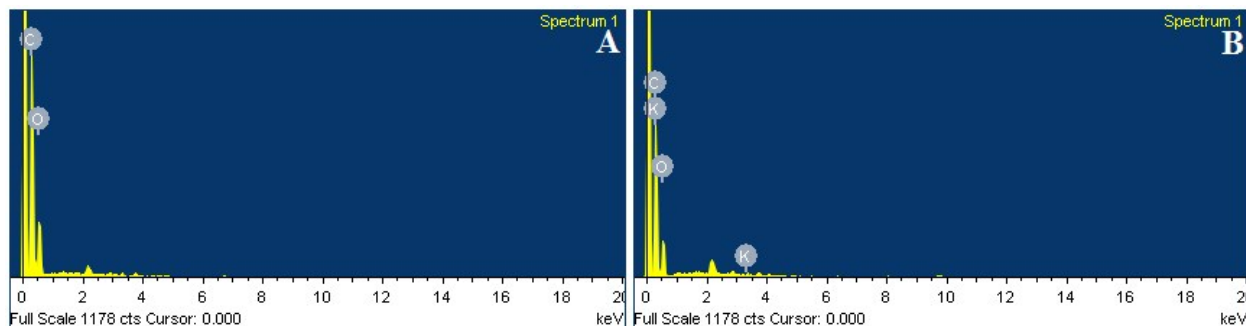
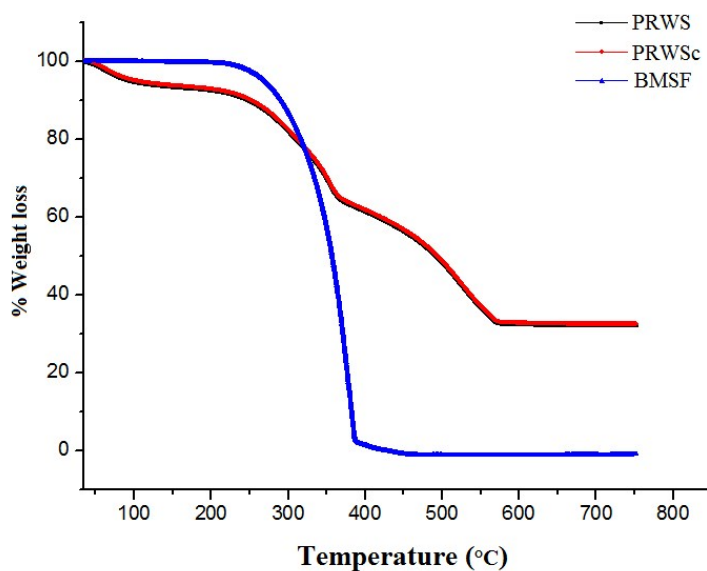


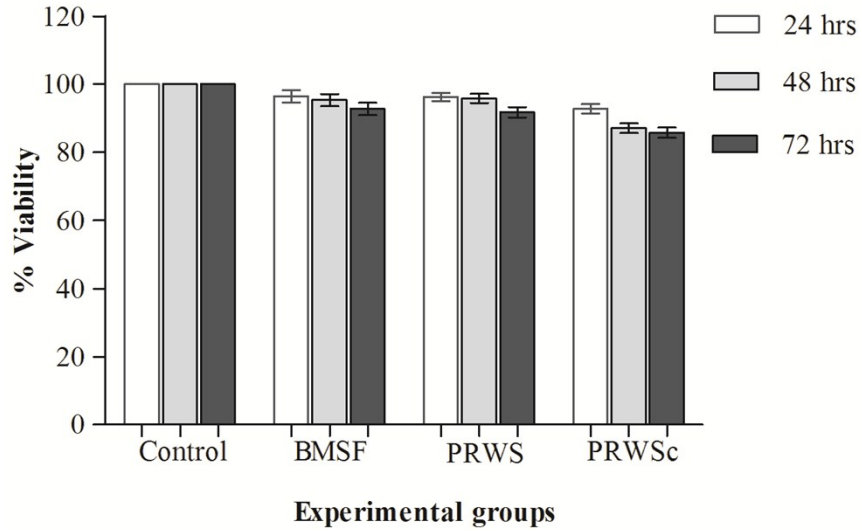
Supplementary material



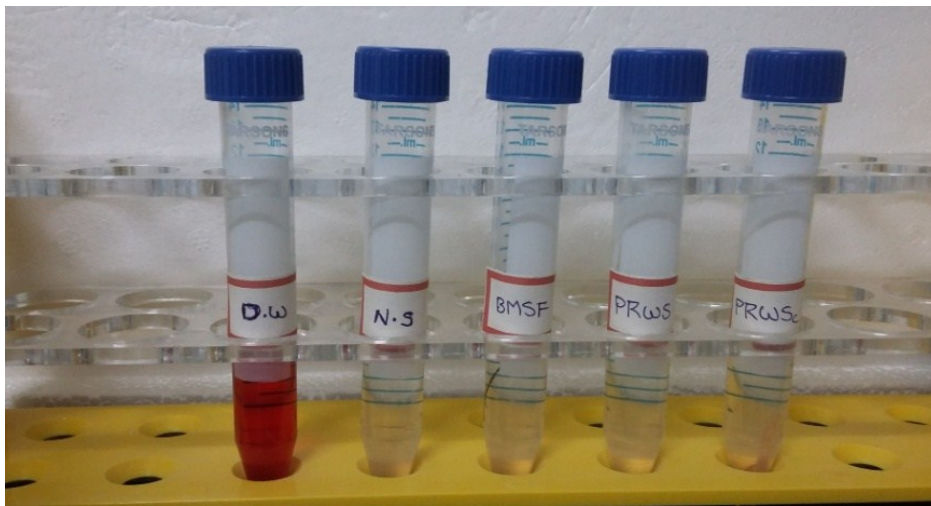
Supplementary Fig.S1: Elemental analysis of non coated *Philosamia ricini* waste suture (PRWS) and coated *Philosamia ricini* waste suture (PRWS) by using Energy-dispersive X-ray spectroscopy (EDX)



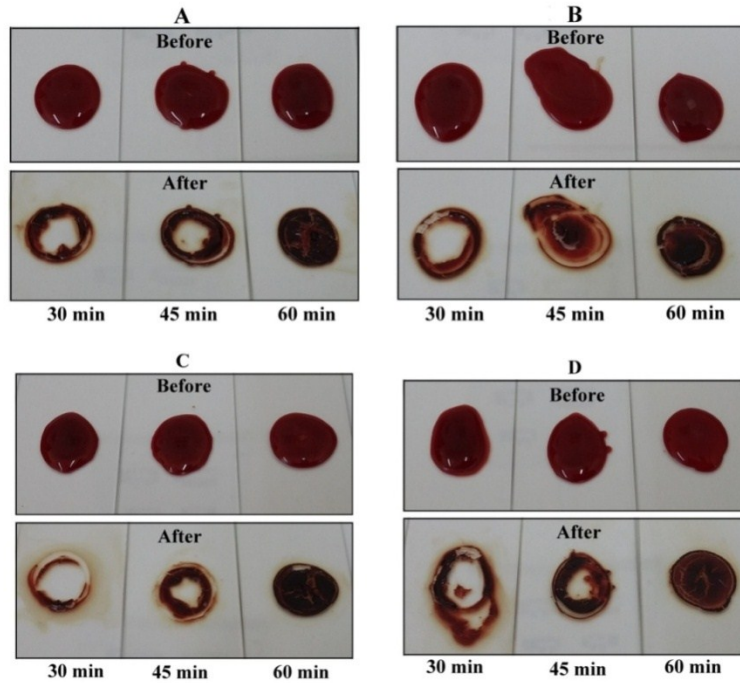
Supplementary Fig.S2: Thermal stability analysis of BMSF, non coated *Philosamia ricini* waste suture (PRWS), and coated *Philosamia ricini* suture (PRWSc) using TGA



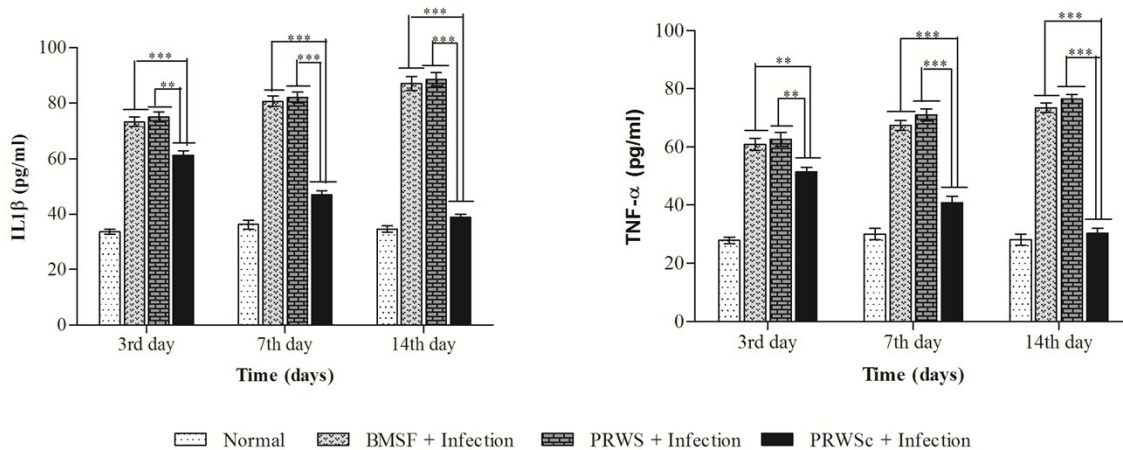
Supplementary Fig.S3: Graphical representation of MTT assay results for BMSF, non coated *Philosamia ricini* waste suture (PRWS), and coated *Philosamia ricini* suture (PRWSc) along with the positive control at 24 hrs, 48 hrs, and 72 hrs



Supplementary Fig S4: Study of hemolytic potential of distilled water (DW), normal saline (NS), BMSF, non coated *Philosamia ricini* waste suture (PRWS), and coated *Philosamia ricini* suture (PRWSc)



Supplementary Fig S5: Images showing *in vitro* antithrombogenic property evaluated for control (A), BMSF (B), non coated *Philosamia ricini* waste suture (PRWS) (C), and coated *Philosamia ricini* suture (PRWSc) (D) at blood clotting time of 30, 45 and 60 min (n=3)



Supplementary Fig S6: Changes in the levels of serum inflammatory cytokine IL-1β and TNF-α at 3rd, 7th, and 14th post operative day of *S. aureus* infected animals sutured with BMSF, non coated *Philosamia ricini* waste suture (PRWS), and coated *Philosamia ricini* suture (PRWSc) in comparison to control animals. The values are expressed as mean ± standard deviation (n=6). At 14th day of infection IL-1β and TNF-α levels significantly decreased ((***)p<0.001) in PRWSc sutured animal

Supplementary Table S1: Degradation study of sutures (BMSF, PRWS and PRWSc) in terms of percentage loss in dry weight and tensile strength after 14 days of incubation.

| Suture material | % loss in dry weight | % loss in tensile strength |
|------------------------|-----------------------------|-----------------------------------|
| BMSF | 8.2 ± 1 | 6.5 ± 1.1 |
| PRWS | 9 ± 1.32 | 7.01 ± 1 |
| PRWSc | 10.99 ± 2 | 7.32 ± 1.2 |

All the results were expressed in mean ± S.D (n=3). PRWS: Non-coated *Philosamia ricini* waste suture; PRWSc: coated *Philosamia ricini* waste suture.