

Janus-Structured Reg/PVA/PAN@TiO₂ nanofiber dressing containing
RegIIIγ recombinant antimicrobial peptides for Promoting Wound
Healing

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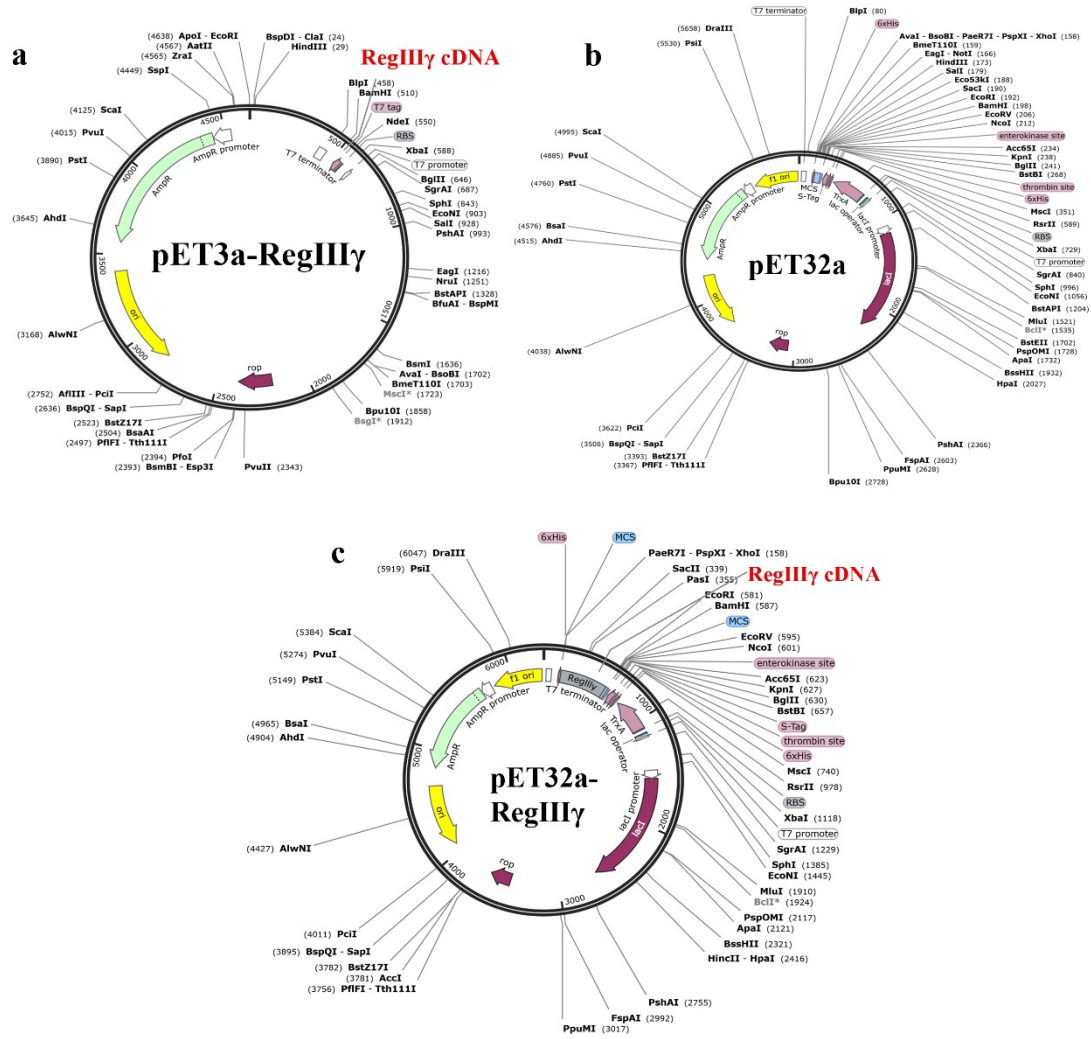
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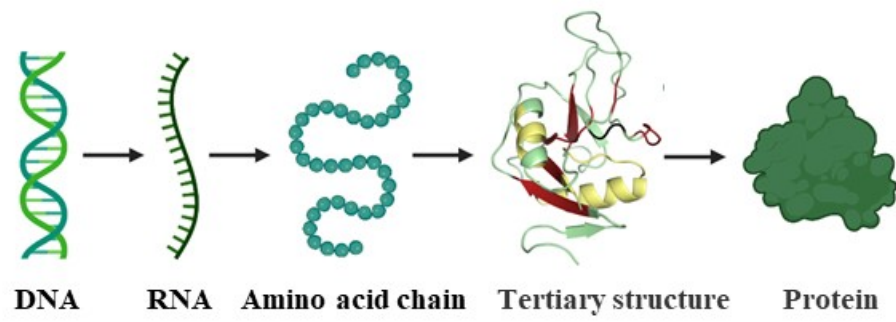


Fig S2. Expression process of RegIII γ gene.

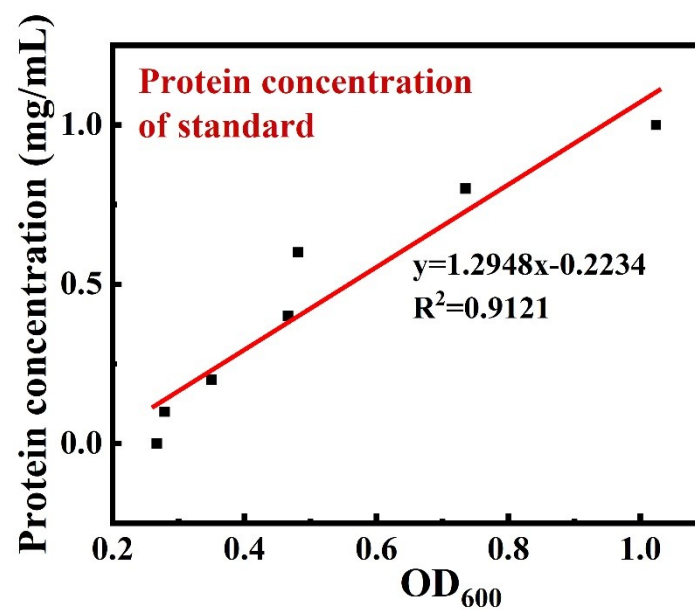


Fig S3. Standard curve for protein concentration. The protein concentration was determined using the standard curve and absorbance calculations.

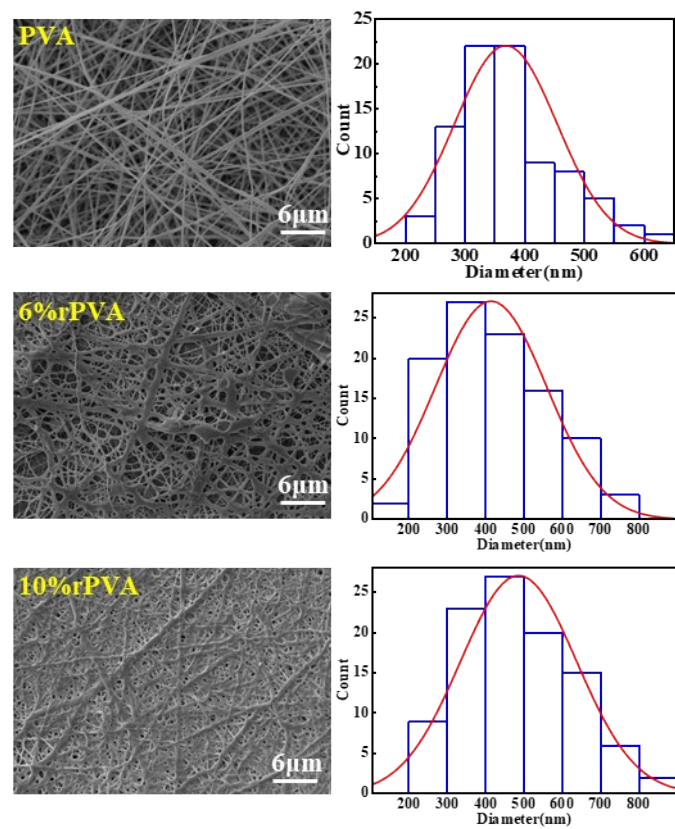


Fig S4. SEM images and diameter distribution.

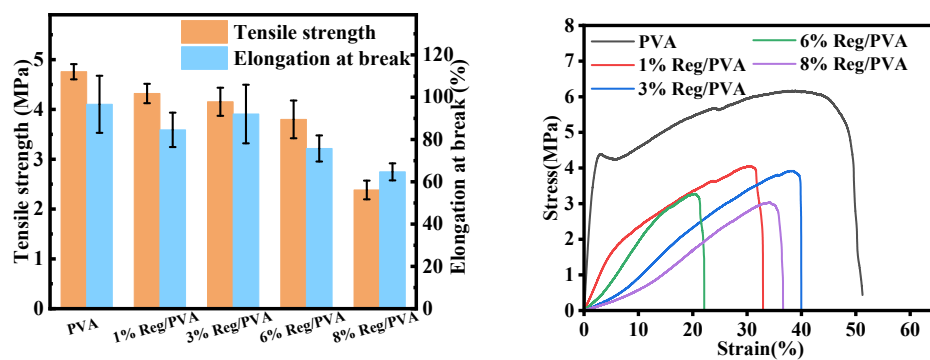


Fig S5. Tensile poperties and Tensile stress-strain curves of Reg/PVA with different RegIII γ protein concentrations.

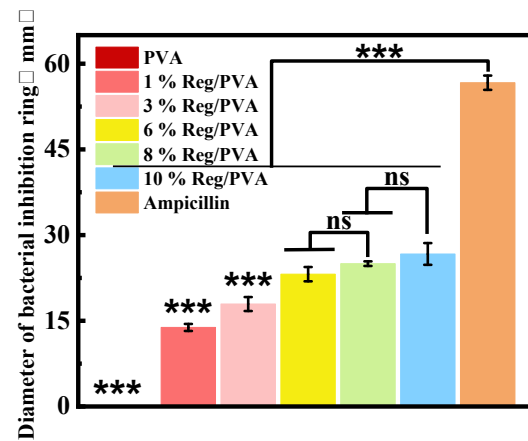
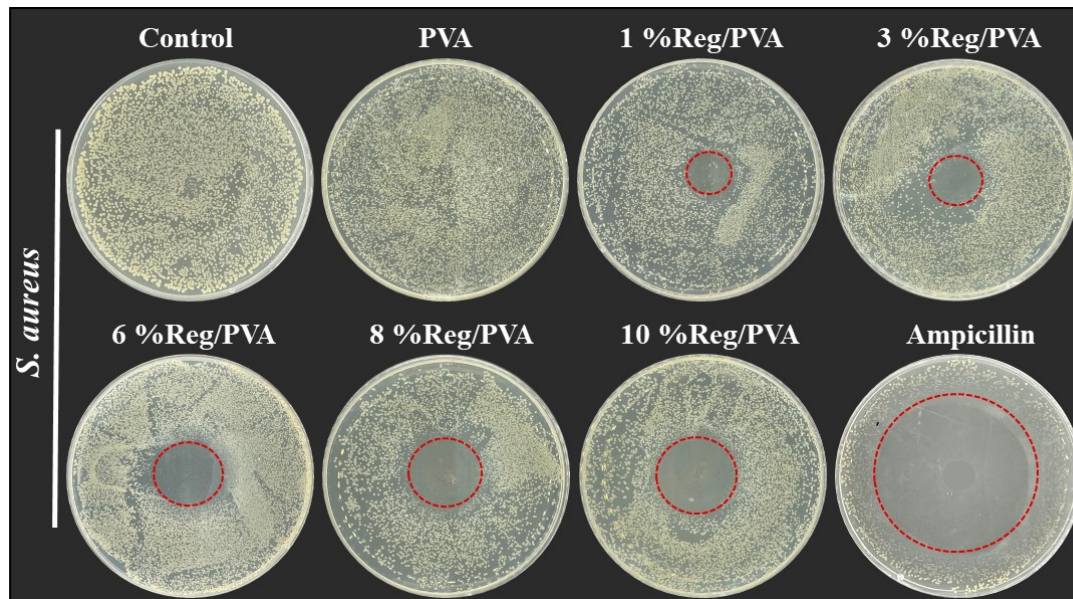


Fig S6. Antibacterial activity of the Reg/PVA wound dressings against *S. aureus*.

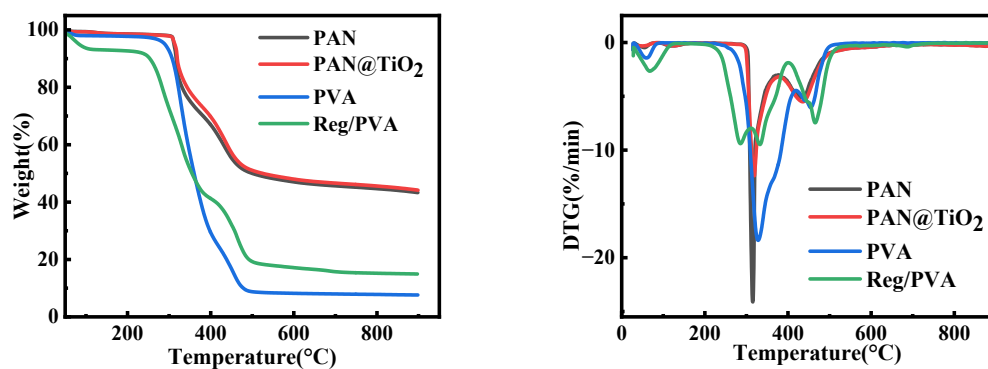


Fig S7. TG curves of nanofiber wound dressings.

Table S1. Comparison of the prepared Reg/PVA/PAN@TiO₂ nanofibrous wound dressings with previously reported wound dressings.

Components	Fabrication method	Hydrophilicity or hydrophobicity	Antimicrobial activity	Cell viability	Wound healing rate	Tensile Properties	Refs.
PLA/L-2959	Electrospinning, Hydrogel	Super-hydrophilicity	N/A	85%/24h (NIH/3T3 fibroblasts)	N/A	4Mpa 25%	[39]
CS/PEO/NP10	Electrospinning	N/A	12mm G+/G-	110% (Human red blood cells)	100% 14d	N/A	[40]
BT-OHA/THM-APMH	Hydrogel	Hydrophilicity	95%	90%/72h (NIH/3T3 fibroblasts)	95% 9d	N/A	[33]
NZnO/SF/nHA	Electrospinning	Hydrophilicity	50%	90%/7d (MC3T3-E1)	N/A (bone repair)	2.1Mpa 4%	[41]
PLGA/PDO/W379	Nanofiber aerogel	N/A	N/A	90%/24h (human keratinocytes and HDF)	80% 14d	N/A	[42]
ε-PL/PCL/Gel	Electrospinning	Hydrophilicity	14mm	OD ₄₉₀ =1.1/4d (Keratinocytes and fibroblasts)	N/A	2.5Mpa 17%	[43]
PDA/PLA/Gel/SF/NF	Electrospinning, Hydrogel	Hydrophilicity	N/A	OD ₄₉₀ =1.2/72h (HUVEC cells)	85% 14d	0.106 MPa -0.097 MPa (20th compression cycle)	[44]
PLGA/Gel/PRIP	Electrospinning	Hydrophilicity	N/A	98% (HFF-1 cells)	100% 14d	2.2Mpa 280%	[45]
KGM/BMS / CMS/non-woven	Nanofiber aerogel	Super-hydrophilicity and hydrophobicity	92%	80%/24h (L929 cells)	100% 14d	N/A	[46]
NIPAM/GTA/HA	Hydrogel	Hydrophilicity	N/A	90%/24h (L929 cells)	98% 21d	N/A	[47]
PCL/PEG/H. perforatum oil	Electrospraying, Electrospinning	Hydrophilicity and Hydrophobicity	12mm	110% (L929 cells)	N/A	2.5Mpa	[48]
PCL/PVA/SSD	Coelectrospinning	Hydrophilicity	4mm/G+	Toxicity effects of SSD	N/A	2.4Mpa 45%	[49]
BTO/PEEK	Electrospinning, coat	Hydrophilicity	96.5%	OD _{value} =0.8/72h (BMSC cells)	Ligament-bone healing	N/A	[50]
PVA/PAN/REGIIIγ/TiO ₂	Electrospinning	Hydrophilicity and Hydrophobicity	28.5mm	90%/48h (L929 cells)	100% 14d	2.5Mpa 35%	Our work

Table S2. Effect of Reg/PVA/PAN@TiO₂ nanofiber dressing on serum biochemistry (mean ± SEM).

Item	Groups		P-value
	Control (n=5)	Reg/PVA/PAN@TiO ₂ (n=5)	
ALT (U/L)	30.70 ± 1.31	30.56 ± 2.98	0.944
AST (U/L)	141.87 ± 47.25	101.83 ± 9.83	0.224
TBIL (μmol/L)	22.28 ± 7.40	16.81 ± 1.41	0.277
ALB (g/L)	35.40 ± 1.58	36.59 ± 1.25	0.363
ALP (U/L)	267.54 ± 19.07	306.02 ± 61.50	0.378
TP (g/L)	45.85 ± 2.20	45.00 ± 1.08	0.580
CREA (μmol/L)	61.45 ± 60.41	21.65 ± 2.86	0.318
UA (μmol/L)	129.16 ± 21.15	123.18 ± 52.54	0.864
LDH (U/L)	1078.06 ± 489.90	757.41 ± 175.46	0.346
CK (U/L)	973.81 ± 217.53	697.96 ± 111.21	0.124