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Table S1 Sol-gel transition temperature ( $T_{\rm gel}$ ) of bulk poloxamer gel determined by the stirring method.

Concentration of P407 (%, w/w)	T <sub>gel</sub> (°C)
15.0	$37.7 \pm 0.2$
17.5	$30.3 \pm 0.1$
20.0	$25.8 \pm 0.1$
22.5	$23.9 \pm 0.2$
25.0	$22.4 \pm 0.1$
27.5	$19.9 \pm 0.2$

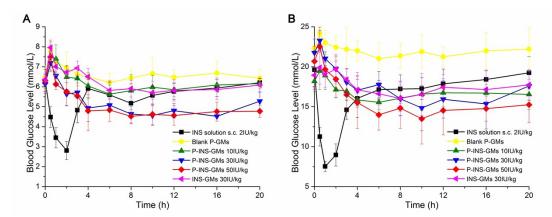


Fig. S1 The blood glucose level after oral administration of different INS-loaded formulations in normal (A) and diabetic (B) rats.

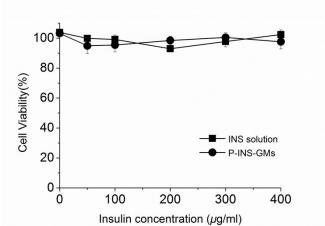


Fig. S2. Cell viability of caco-2 cells after incubation with P-INS-GMs within insulin concentration range of 50-400  $\mu g/mL$