

Figure S1: Measurement hierarchy fully traceable to SI units

(a) Illustration in ISO 17511:2020 with commutable RM of m3

(b) Measurement hierarchy with commutable RM of m2

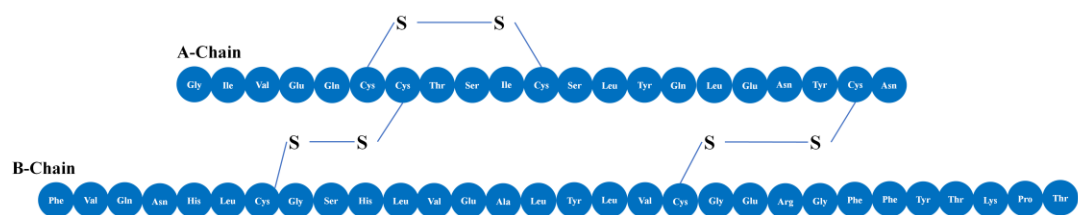


Figure S2: Schematic illustration of human insulin structure

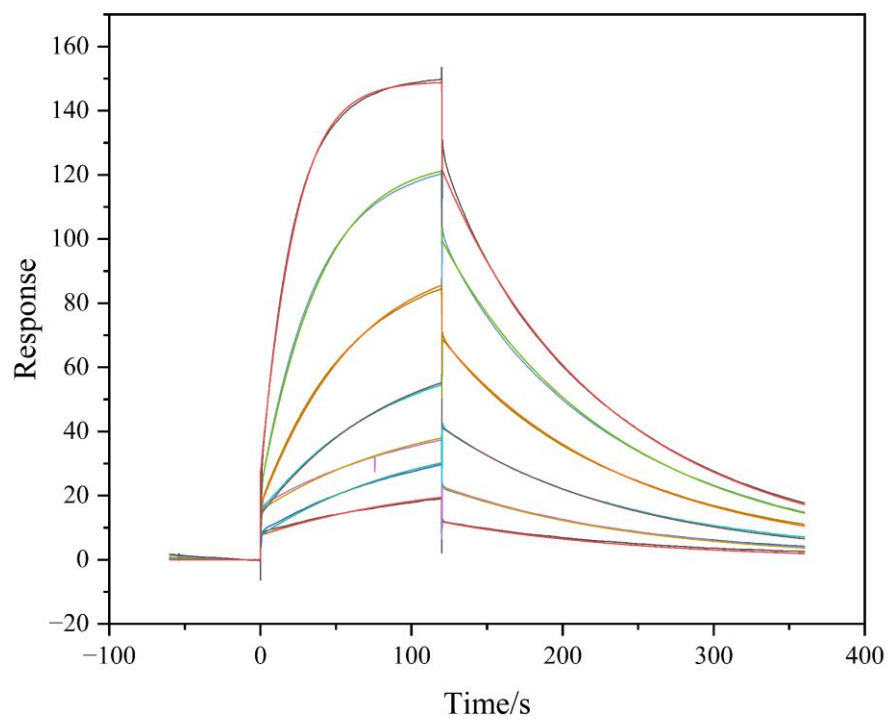


Figure S3: Determination of the kinetic constants between insulin and mAbs

Table S1. Uncertainty component from value assignment

Level	Pipettor	Balance	GBW09292	volumetric flask	LOD	Homogeneity	Stability	u_c	U
1	0.31%	0.21%	1.40%	0.51%	0.01%	1.01%	1.21%	2.20%	4.4%
2	0.25%	0.21%	1.40%	0.51%	0.02%	1.24%	1.50%	2.47%	5.0%
3	0.25%	0.21%	1.40%	0.51%	0.02%	0.92%	0.87%	1.98%	4.0%
4	0.39%	0.21%	1.40%	0.51%	0.03%	0.79%	0.77%	1.91%	3.8%
5	0.18%	0.21%	1.40%	0.51%	0.06%	0.98%	1.33%	2.24%	4.5%
6	0.35%	0.21%	1.40%	0.51%	0.17%	0.72%	0.97%	1.97%	4.0%