Supporting Information

Immunochromatographic Strip Sensor for Sildenafil and Its Analogues

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Captions:

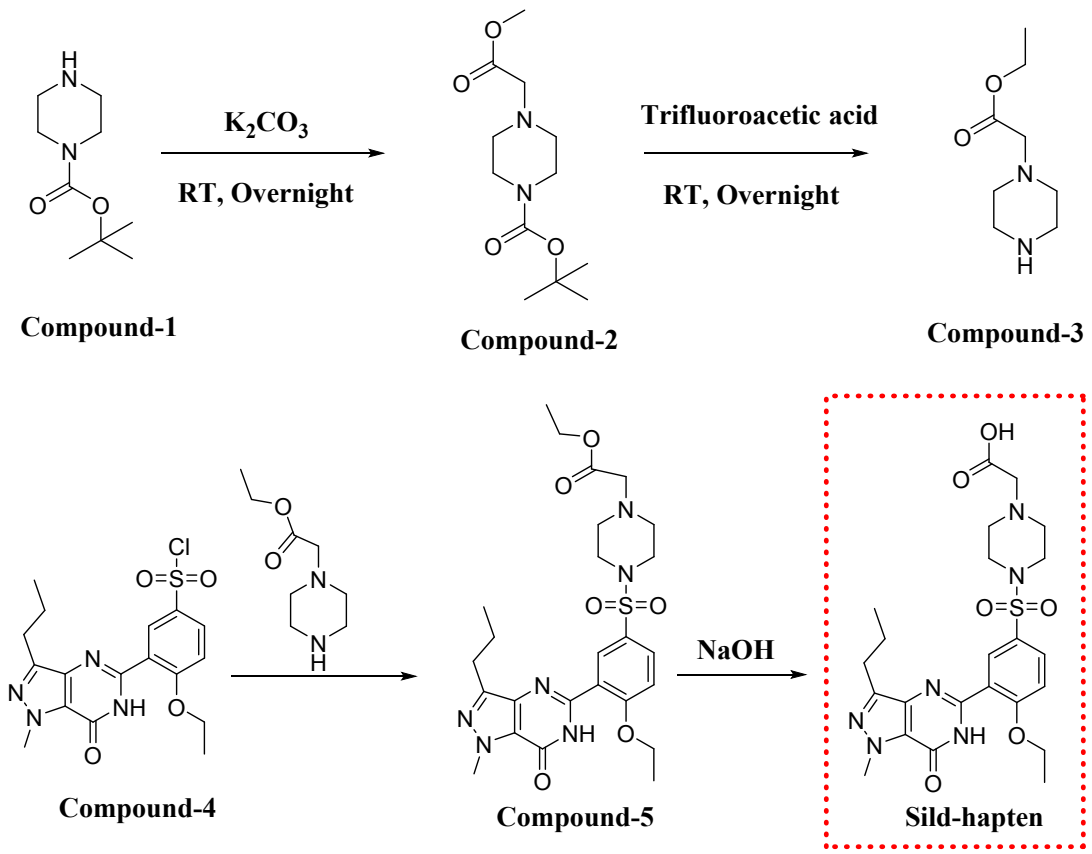


Fig. S1 Synthesis of Sild-hapten.

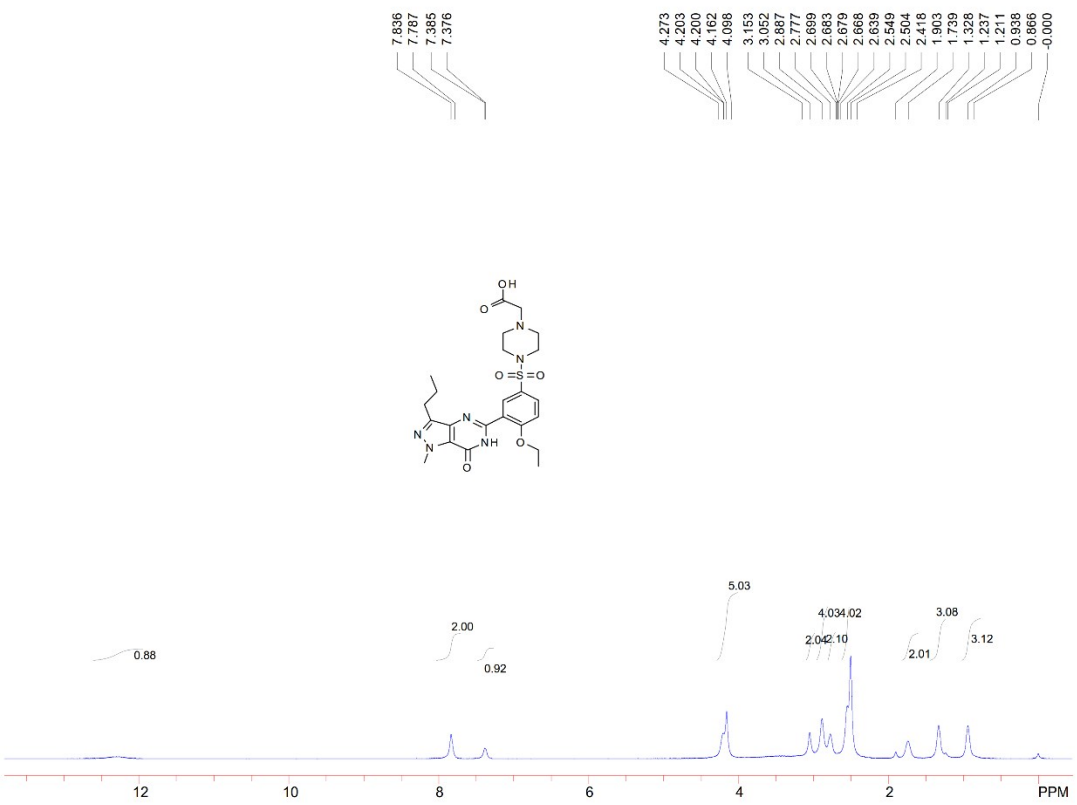


Fig. S2 The characterization of Sild-hapten by ^{1}H NMR spectrometry.

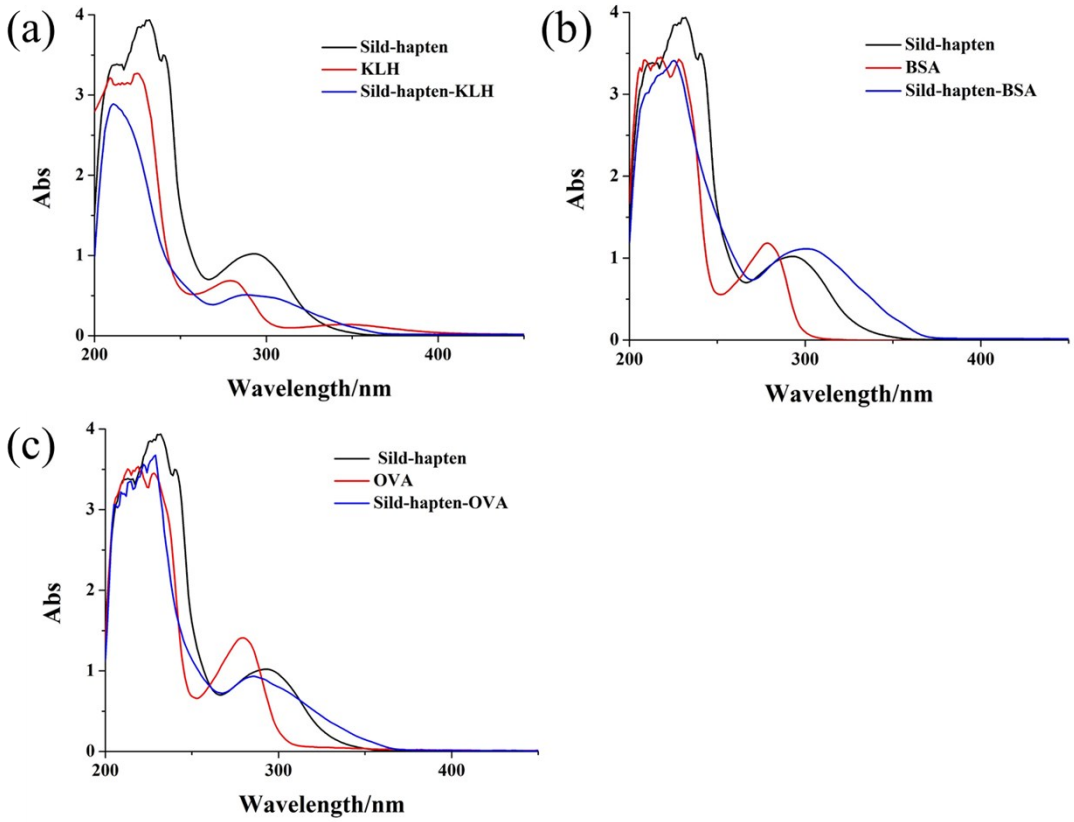


Fig. S3 The ultraviolet spectroscopy of antigens: (a) confirmation of immunogen (Sild-hapten-KLH); (b) (c) confirmation of coating antigens (Sild-hapten-BSA and Sild-hapten-OVA).

Table S1. The cross-reactivity of mAb against Sild.

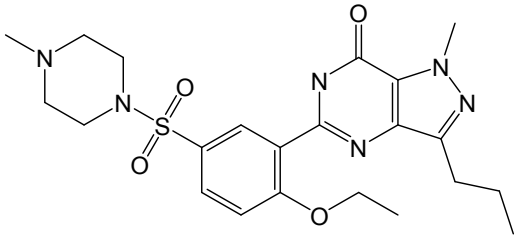
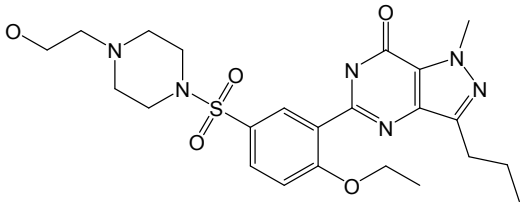
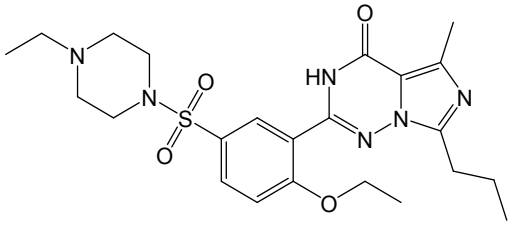
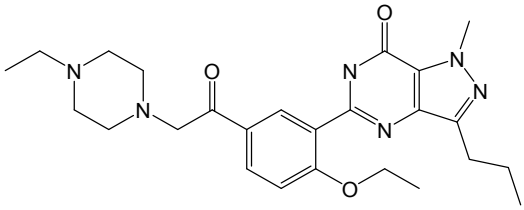
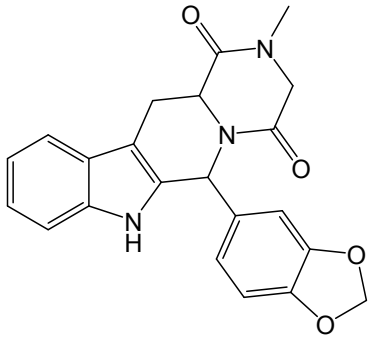
Name	Chemical structure	IC_{50}(ng/mL)	CR (%)
Sild		0.53	100
Hydroxyhomo sildenafil		0.64	82.81
Vardenafil		0.87	60.92
Acetildenafil		1.05	50.48
Tadalafil		>10	5<

Table S2. The comparison between antibody in this work and other works.

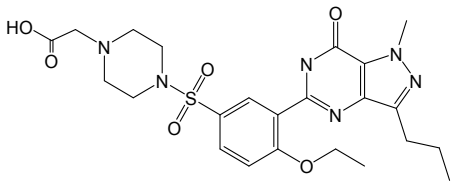
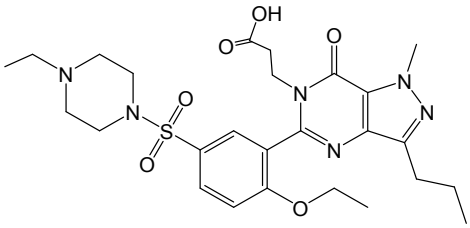
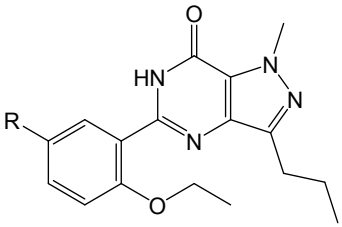
NO.	Hapten	IC_{50} (ng/mL)	LOD (ng/mL)	Ref.
1		0.53	0.08	This work
2		6	0.6	Wang[1]
3		19.3	-	Xiao[2]

Table S3. Recovery analysis of Sild in functional food samples with ICA (n=5).

Spiked level (μg/kg)	Quantitative detection		CV (%)	Qualitative detection [c]
	Detection level (μg/kg) Mean ±SD	Recovery rate (%)		
0	[a]ND	[b]NC	NC	-----
3	3.05±0.03	101.74±0.98	0.96	±±±±±
9	10.13±0.71	112.59±7.87	6.99	±±±±±
27	ND	NC	NC	+++++

[a] ND, not detectable. [b] NC, not calculated. [c] -, negative: the concentration of Sild was below 0.5μg/kg; ±, weakly positive: the concentration of Sild was in the range of 0.5-20 μg/kg; +, positive: the concentration of Sild exceed 20μg/kg.

References

1. Y. Song, Y. Y. Wang, Y. Zhang and S. Wang, *Food and Agricultural Immunology*, 2012, **23**, 338-351.
2. J. Guo, W. Liu, X. Lan, H. Chen and Z. Xiao, *Food additives & contaminants. Part A, Chemistry, analysis, control, exposure & risk assessment*, 2016, **33**, 1095-1104.