

Supplementary Table S1: Chromatographic Conditions

Chromatographic Conditions	
Column	Hipersil C18- (150mm x 4.6 mm, 5µm)
Mobil phase	A10 mL of Triethylamine was dissolved in 1000 mL of water of HPLC grade and pH 5.8 was adjusted using orthophosphoric acid 85% solution. 570 mL of acetonitrile was added to the previously prepared 430 mL of Triethylamine counter ion solution, mixed well, filtered through 0.45 µm nylon membrane, and sonicated for 10 minutes' prior usage.
Rinsing solution	Methanol :water (1:1)
Sample cooler temperature	25
injection volume	20 µL
Run time	15 minutes
Flow rate	1.0 mL/minute
wavelength	250

Supplementary Table S2: Honey samples were collected from different governorates in the kingdom of Jordan

Sample ID	Sources	Weight of Sample (g)
Sample 1	South of Amman	5.10
Sample 2	North of Amman	5.20
Sample 3	West of Amman	5.05
Sample 4	East of Amman	4.97
Sample 5	Downtown Amman (1)	5.80
Sample 6	Downtown Amman (2)	5.40
Sample 7	Downtown Amman (3)	5.60
Sample 8	Ajloun	5.00
Sample 9	Jerash	5.41
Sample 10	Irbid	5.32
Sample 11	Karak	5.14
Sample 12	Tafila	5.32

Supplementary Table S3: the results of weighing and finely powdering twenty pills representing the various dose types

Tablets	the factory	Trade Name
1. Sildenafil tablet	(Dar al Dawa, Jordan)	(Aphrodil)
2. Tadalafil tablet	(Dar al Daw, Jordan)	(Tyra)
3. Vardenafil tablet	(Bayer, Jordan)	(Levetra)
4. Avanafil tablet	(EMC)	(Spedra)
5. Udenafil tablet	(Zydny)	(Udzera)

Supplementary Table S4: Specificity test - Loss in potency for sildenafil

Condition	Assay%	Loss%
Normal	100	0
Heat	100	0
Hydrolysis	100	0
Acid	63.17	36.83
Base	72.3	27.7
Oxidation	100	0
Photolysis	100	0

Supplementary Table S5: Specificity test - Loss in potency for udenafil

Condition	Assay%	Loss%
Normal	100	0
Heat	100	0
Hydrolysis	100	0
Acid	65.34	34.66
Base	69.3	30.7
Oxidation	100	0
Photolysis	100	0

Supplementary Table S6: Specificity test - Loss in potency for Vardenafil

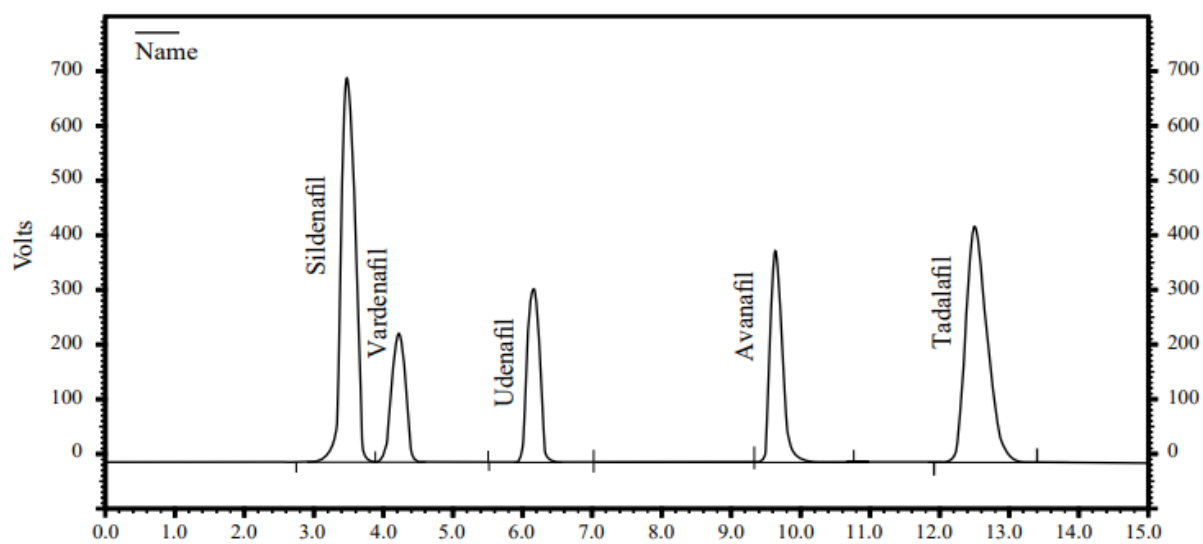
Condition	Assay%	Loss%
Normal	100	0
Heat	100	0
Hydrolysis	100	0
Acid	73.34	26.66
Base	81.3	18.7
Oxidation	100	0
Photolysis	100	0

Supplementary Table S7: Specificity test - Loss in potency for Avanafil

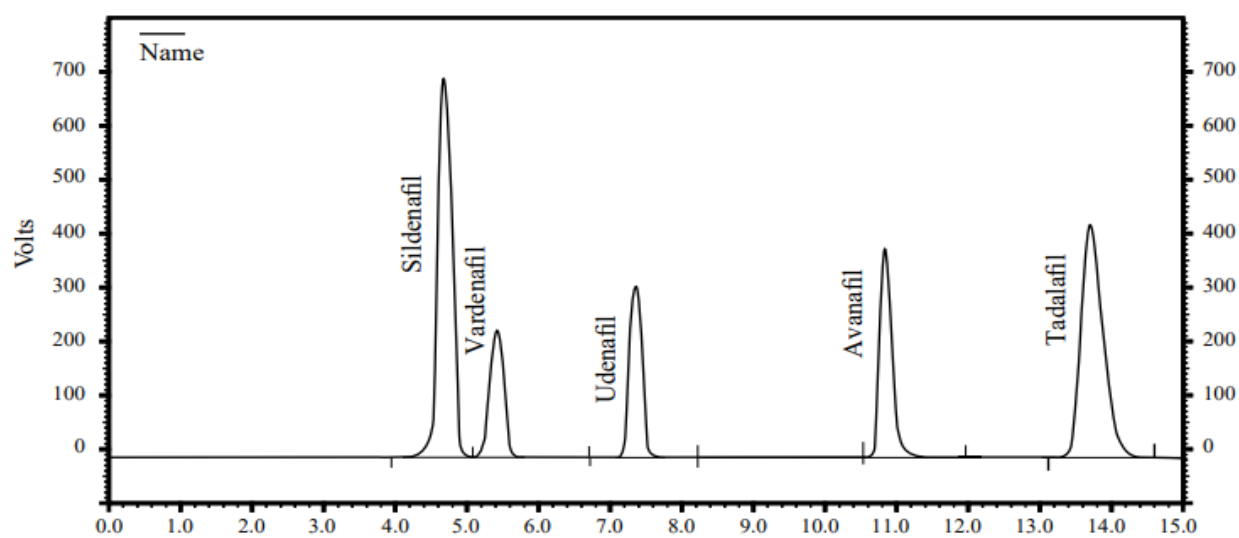
Condition	Assay%	Loss%
Normal	100	0
Heat	100	0
Hydrolysis	100	0
Acid	80.14	19.86
Base	91.4	8.6
Oxidation	100	0
Photolysis	100	0

Supplementary Table S8: Specificity test - Loss in potency for Tadalafil

Condition	Assay%	Loss%
Normal	100	0
Heat	92.4	7.6
Hydrolysis	100	0
Acid	98	2
Base	90.3	9.7
Oxidation	79.7	20.3
Photolysis	100	0

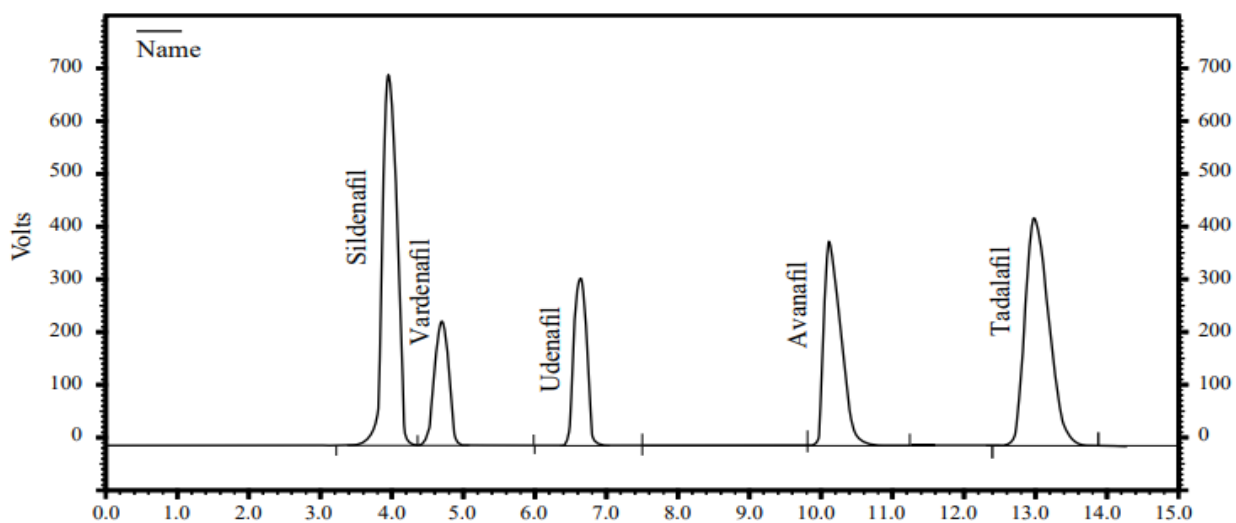


(a)

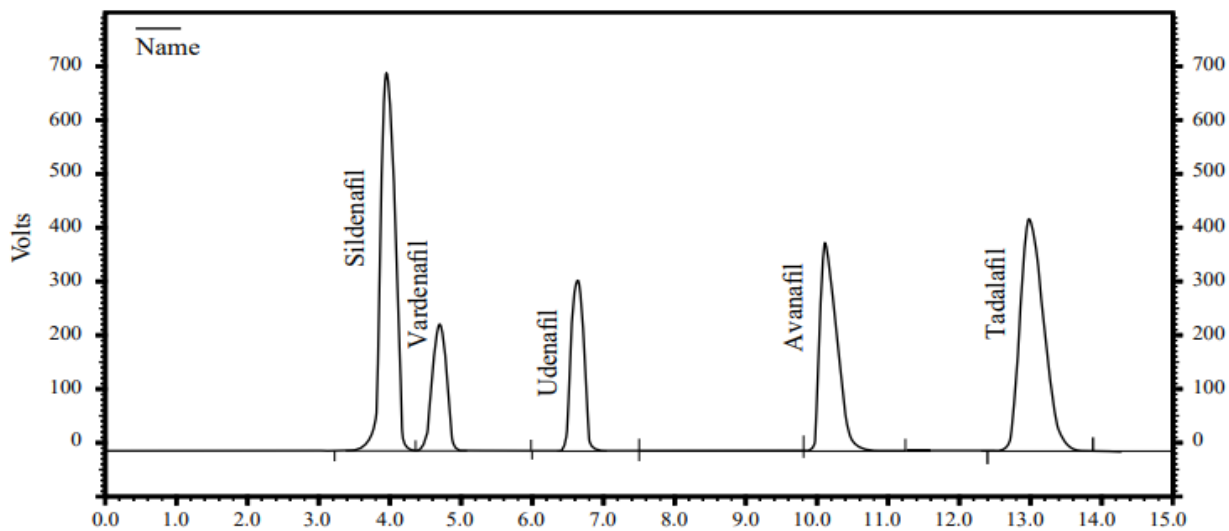


(b)

Supplementary Figure S1: Chromatogram Robustness Test – Modified Flow Rate Standard
Solution (a) 1.2 mL /min (b) 0.8 mL /min

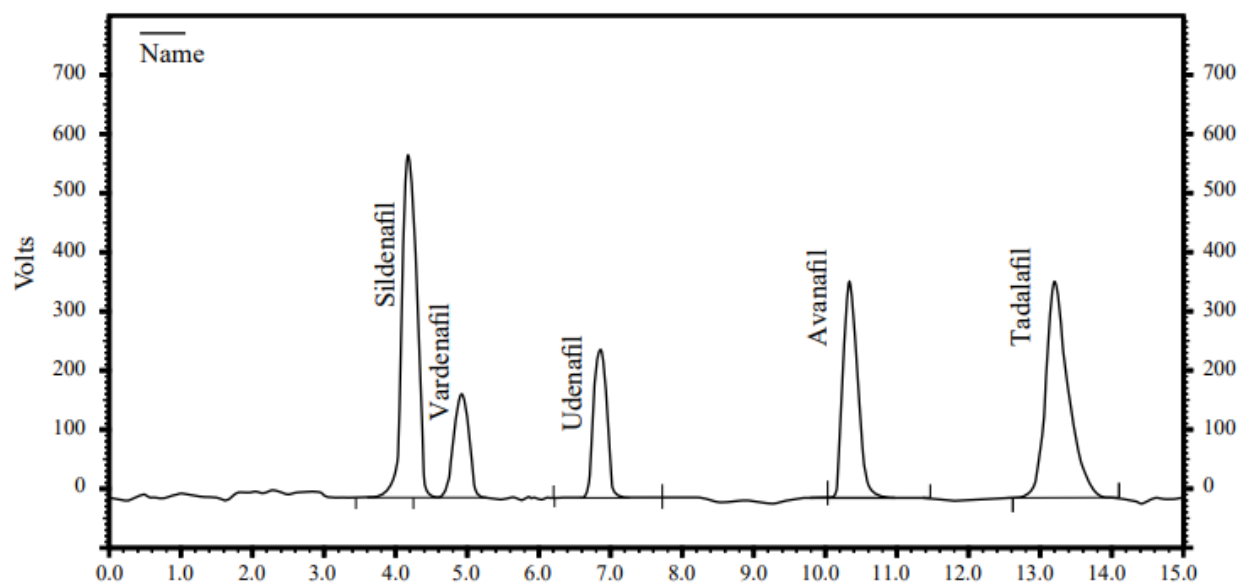


(a)

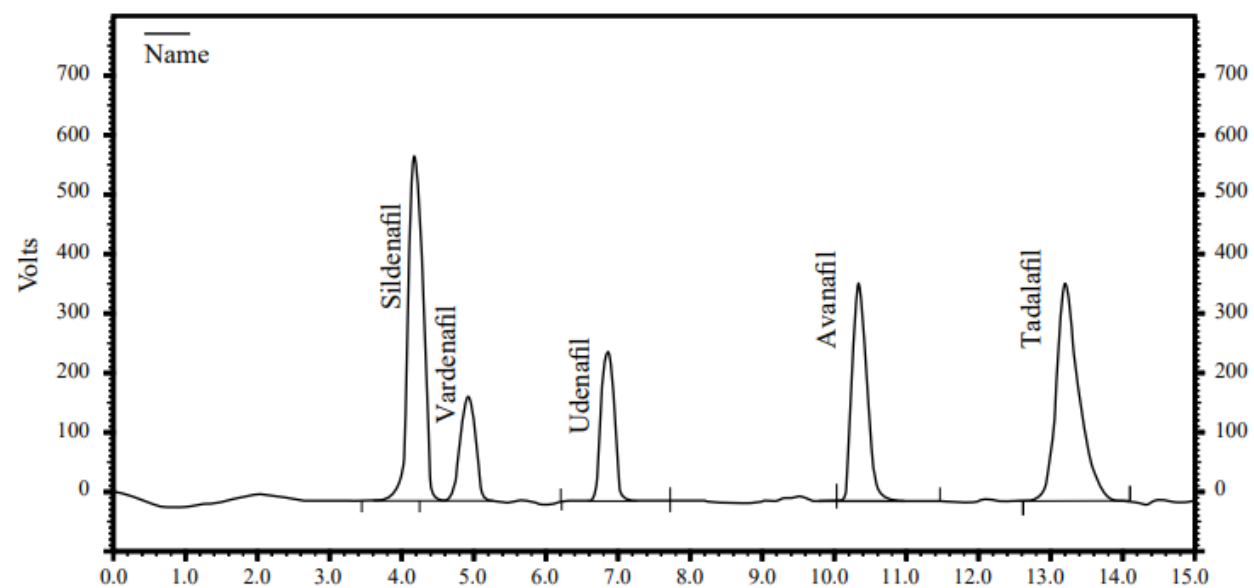


(b)

Supplementary Figure S2: Chromatogram Robustness Test – Modified Wavelength Standard
Solution (a) 247 nm (b) 253 nm

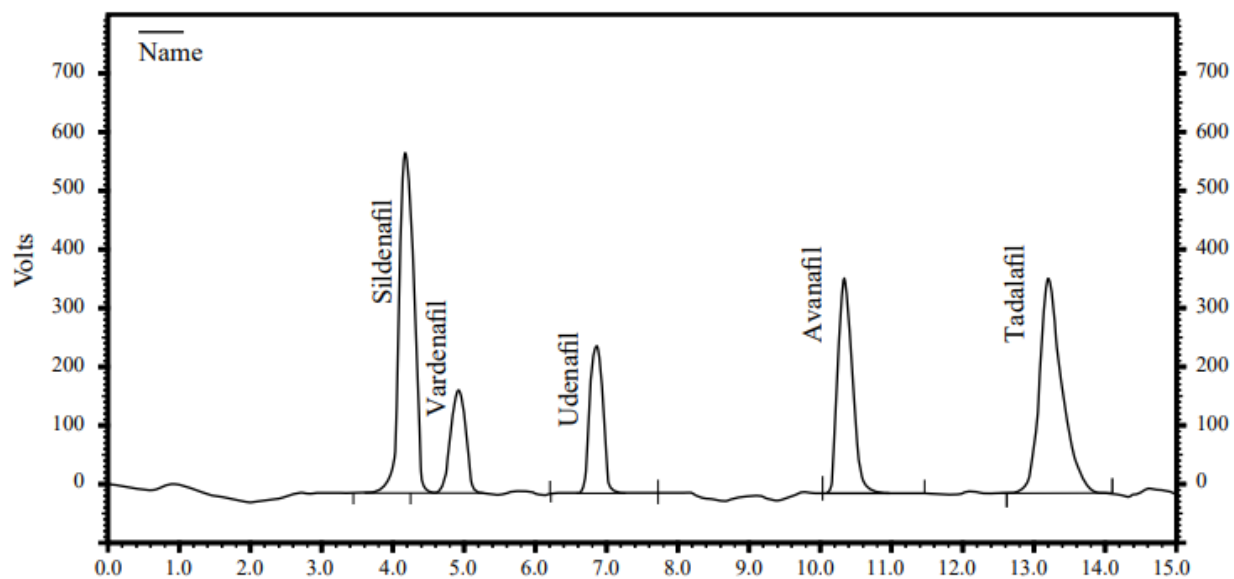


(a)

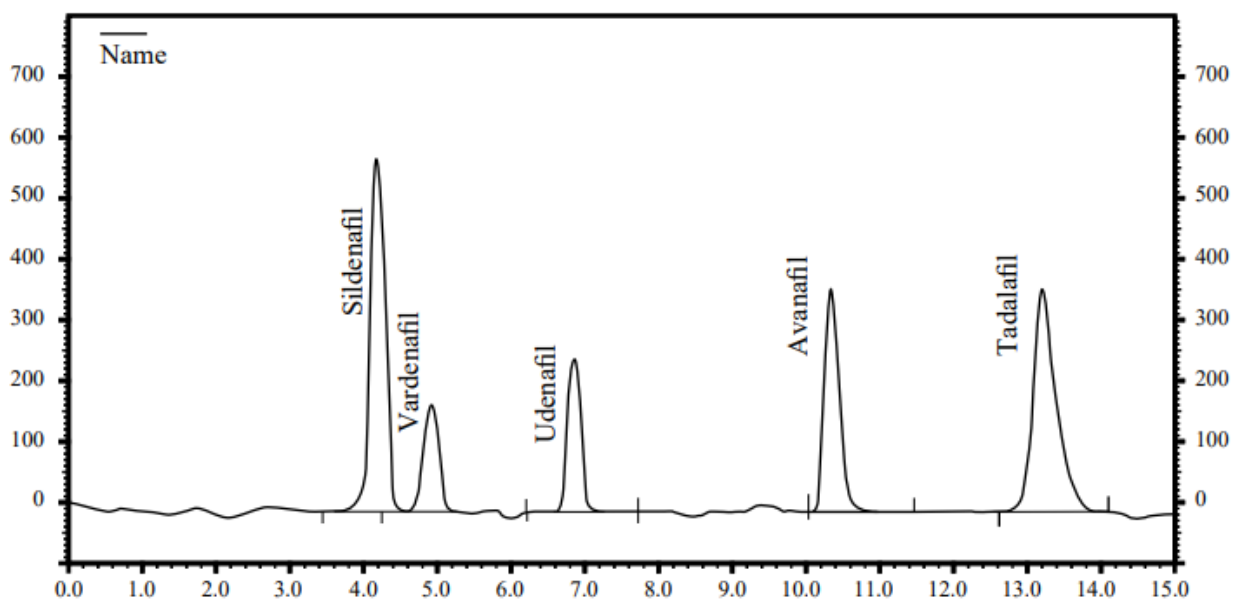


(b)

Supplementary Figure S3: Chromatogram Robustness Test – Modified Column Oven
Temperature Standard Solution (a) 27° C (b) 23° C

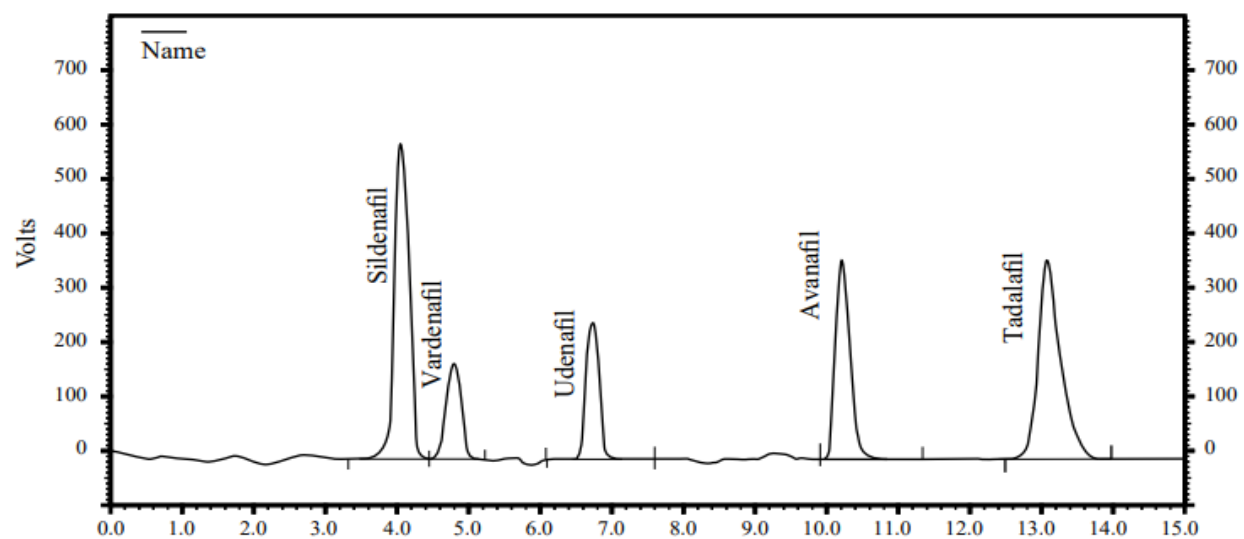


(a)

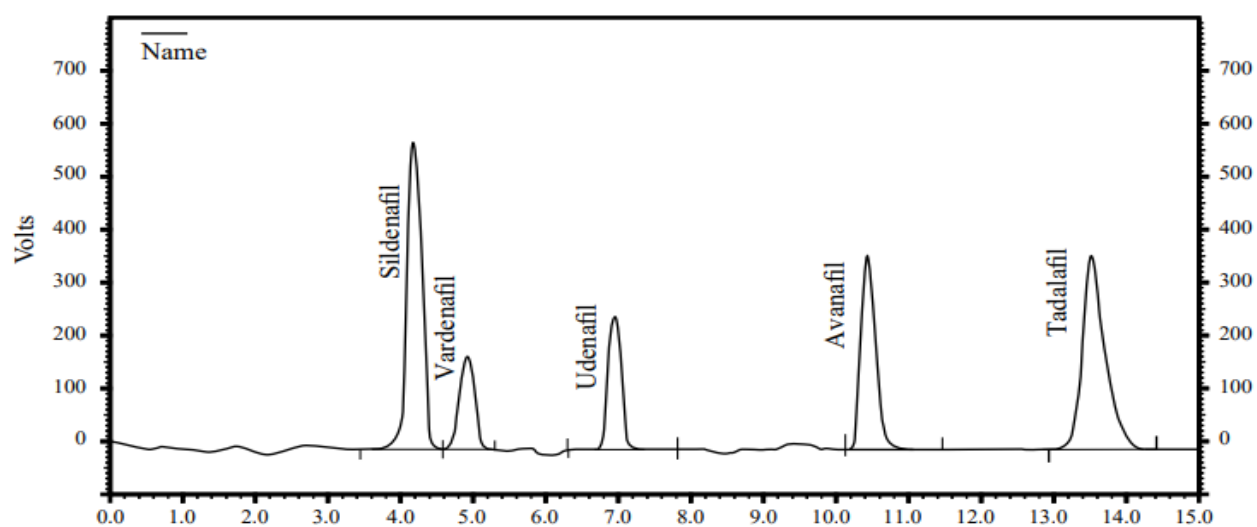


(b)

Supplementary Figure S4: Chromatogram Robustness Test – Modified pH Standard Solution (a) 5.7 (b) 5.9



(a)



(b)

Supplementary Figure S5: Chromatogram Robustness Test – Modified Organic Solvent Composition Standard Solution (a) +3% (b) -3%

Supplementary Figures S6-S11 show overlapping five conditions in the same material.

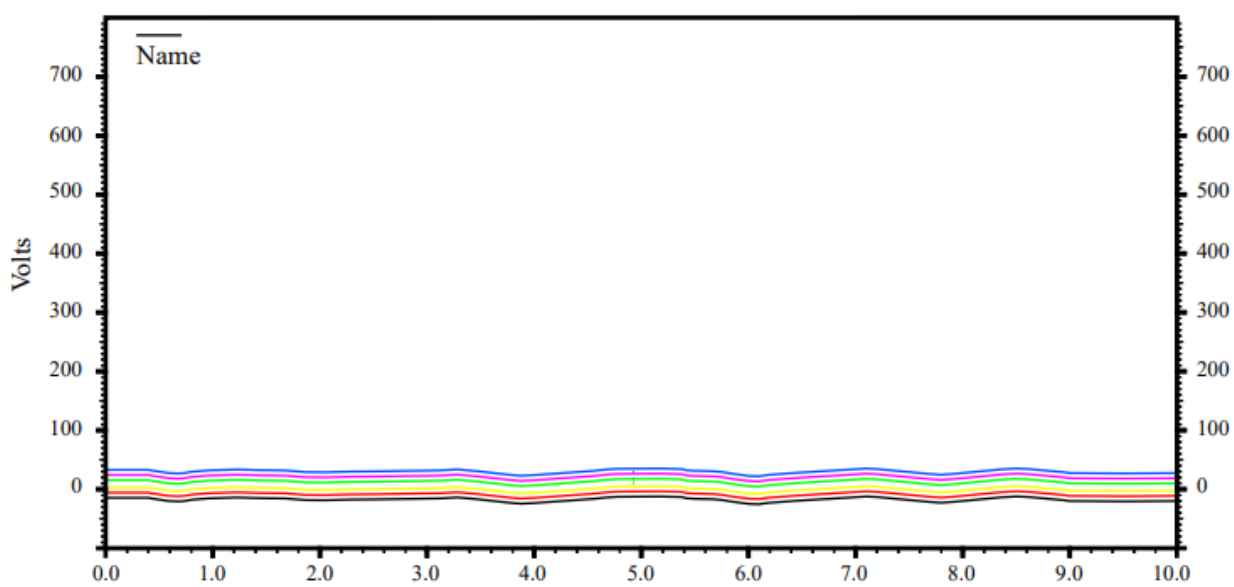


Figure S6: Chromatogram Specificity Test Diluent, Hydrolysis Acid, Base, Oxidation

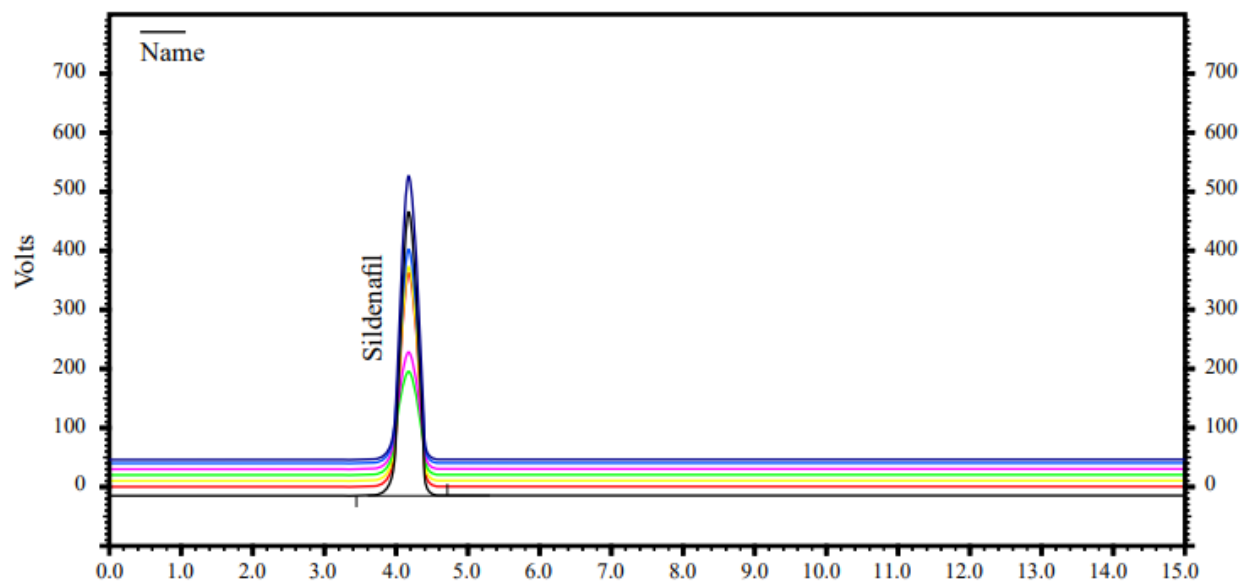


Figure S7: Chromatogram Specificity Test - Sildenafil, Heat, Hydrolysis, Acid, Base, Oxidation

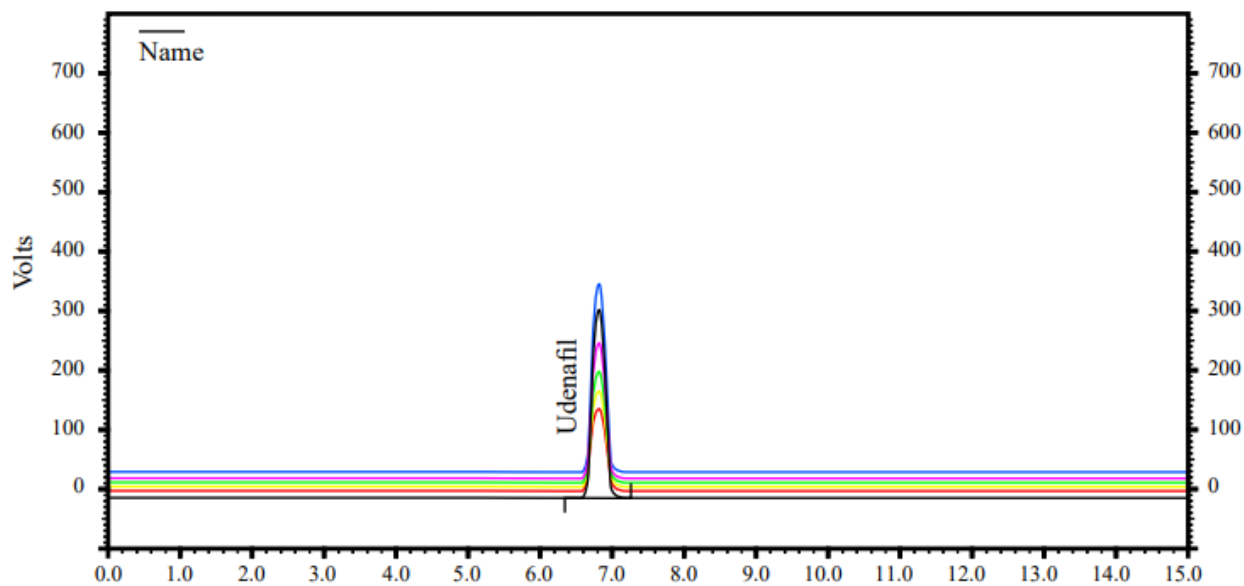


Figure S8: Chromatogram Specificity Test - Udenafil, Heat, Hydrolysis, Acid, Base, Oxidation

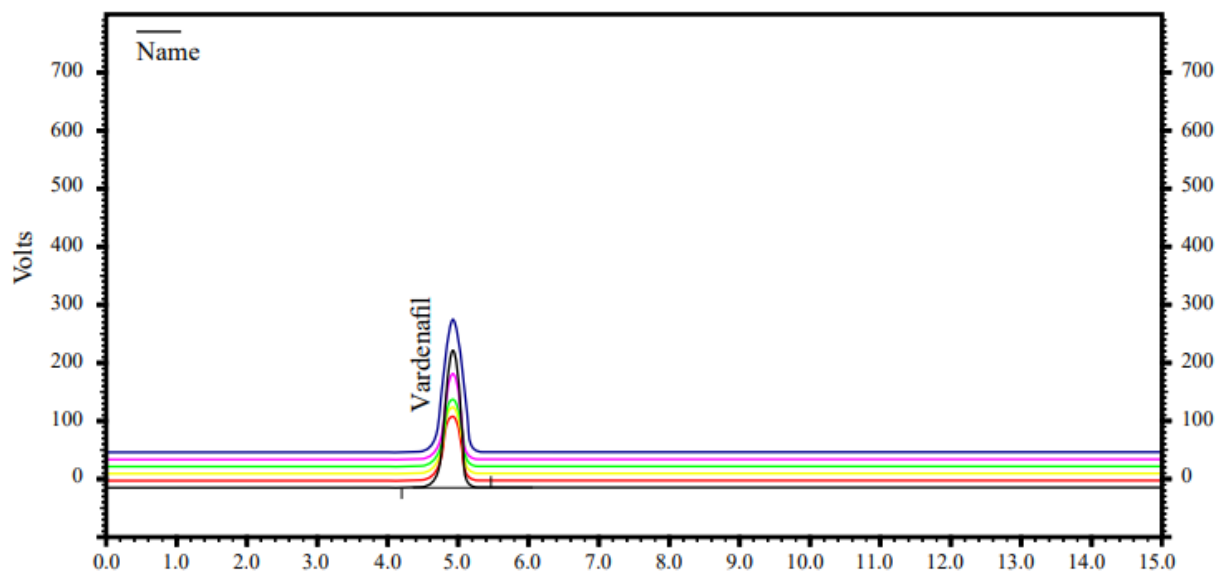


Figure S9: Chromatogram Specificity Test - Vardenafil, Heat, Hydrolysis, Acid, Base, Oxidation

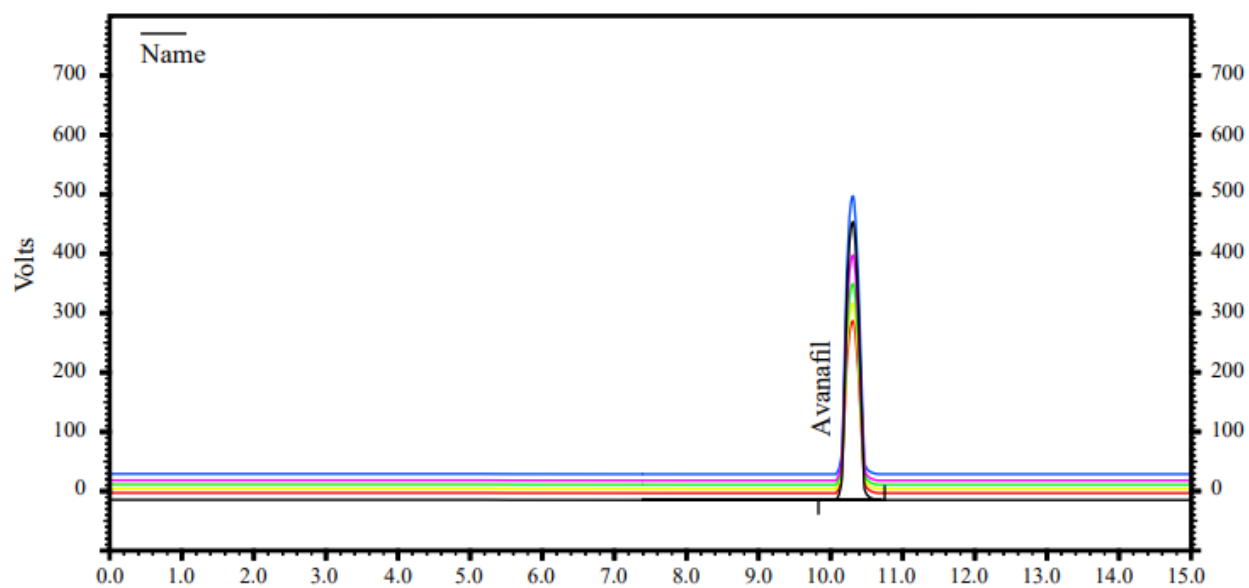


Figure S10: Chromatogram Specificity Test - Avanafil, Heat, Hydrolysis, Acid, Base, Oxidation

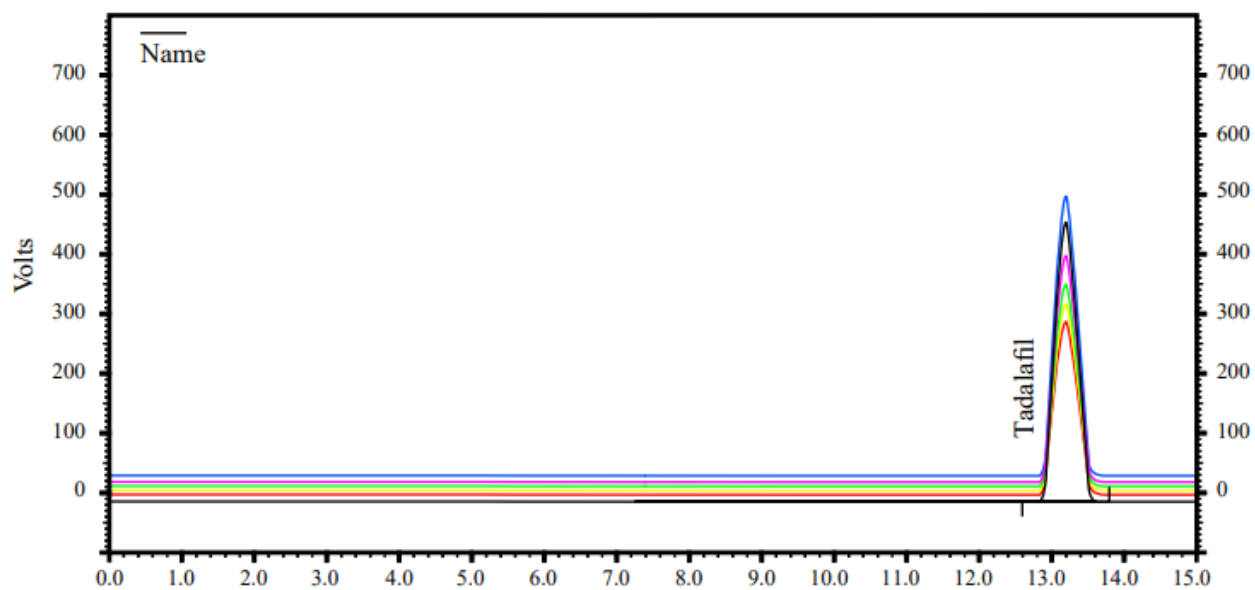


Figure S11: Chromatogram Specificity Test - Tadalafil, Heat, Hydrolysis, Acid, Base, Oxidation