

Equipment-free determination of ascorbic acid based on the UV-induced oxidation of 3,3',5,5'-tetramethylbenzidine in paper-based analysis device

Xiaoxia Liu^{1,2#}, Wenyu Hou^{1#}, Jinzhong Zhao¹, Lili Zhang³, Anping Li^{3*}, Ruiyan Ma^{2*},

1 Department of Basic Teaching, Shanxi Agricultural University, Jinzhong, 030801, China

2 College of Plant Protection, Shanxi Agricultural University, Jinzhong 030801, China

3 Shanxi Zhendong Pharmaceutical Co., Ltd, Changzhi, 047100, China

Table S1. Comparison of AA detection between this work and reported methods.

Materials	Linear range	LOD (μM)	detection method	Ref.
	(μM)			
CuO nanowire	20-100	0.05	Electrochemical	[8]
Rhodamine B@MOF/Fe ³⁺	1-25	0.3	Fluorimetric	[10]
Si-QDs/MnO ₂ nanosheets	1-80	0.48	Fluorometric	[11]
Au nanoclusters/TMB	1-200	0.15	Fluorometric	[12]
		0.22	Colorimetric	
Paper/silver nanoparticles	0-3500	10.5	transmittance colorimeter	[26]
Paper/Iodine/starch	14-5677	14	Scanner (color)	[27]
CoOOH Nanoflakes/TMB	0.5-50	0.14	Colorimetric	[31]
M-CQDs/TMB	10-70	3.26	Colorimetric	[34]
FeMnzyme/TMB	8-56	0.88	Colorimetric	[35]
SiNP-MnO ₂ nanocomposites	1-400	0.102	Fluorometric	[36]
CA-CdTe QDs	0.03-33	0.011	Fluorometric	[37]
Paper/TMB	50-1000	39	Smartphone (color)	This work

MOF, metal-organic framework; QDs, quantum dots; CD, carbon quantum dots.