

## SUPPLEMENTARY INFORMATION

### FOURIER TRANSFORM INFRARED SPECTROSCOPY, THERMOGRAVIMETRIC ANALYSIS, SCANNING ELECTRON MICROSCOPY AS SUPPORTING TOOLS IN QUALITY CONTROL OF ANTIPARASITICS

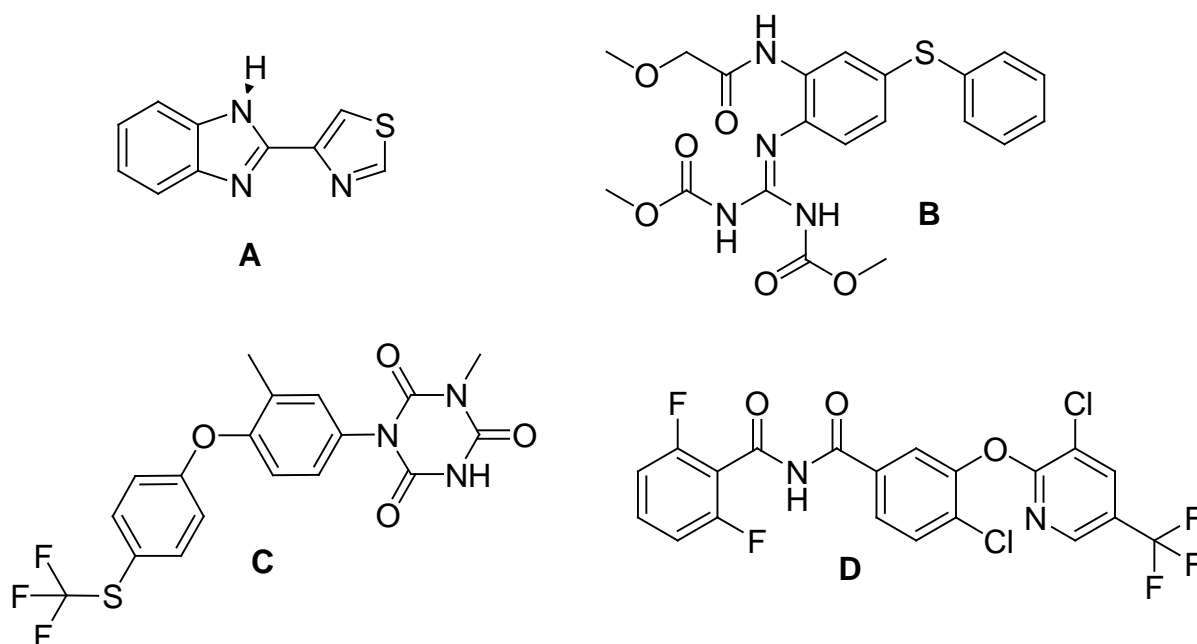
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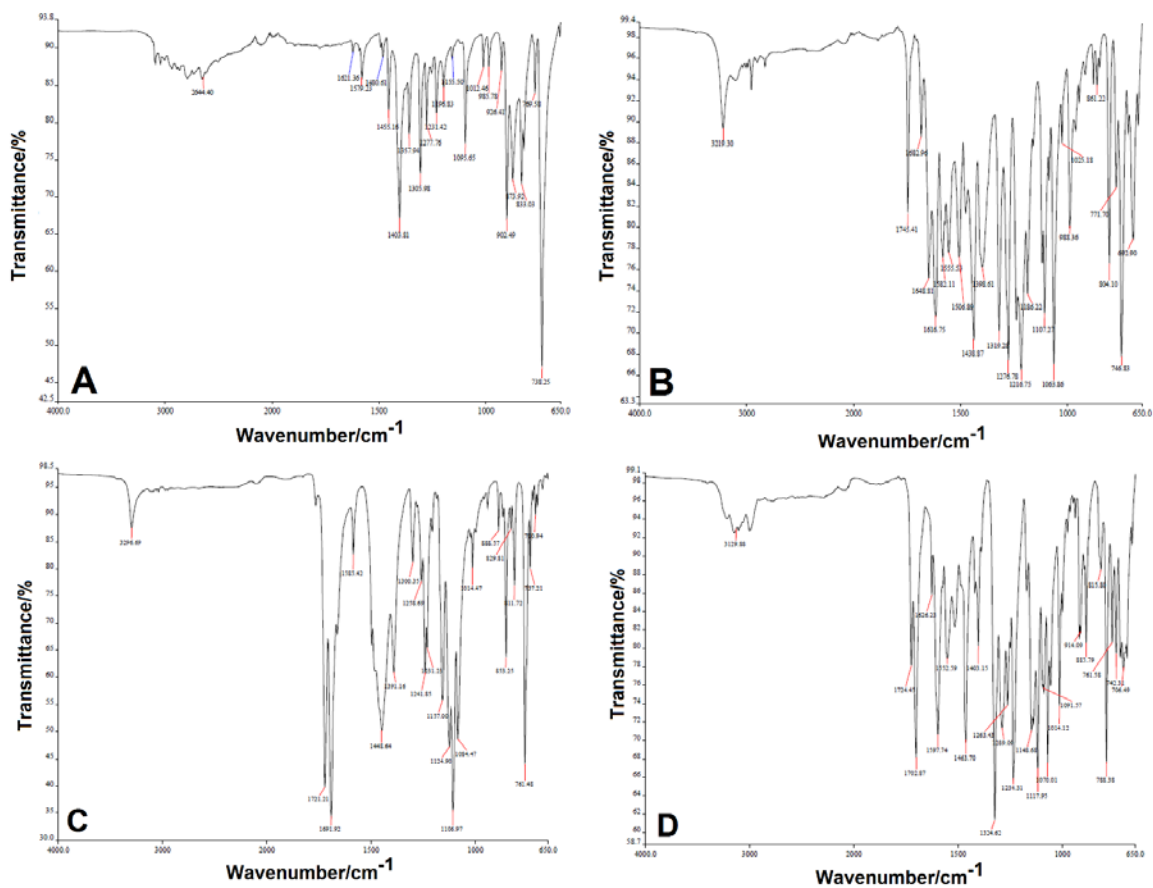
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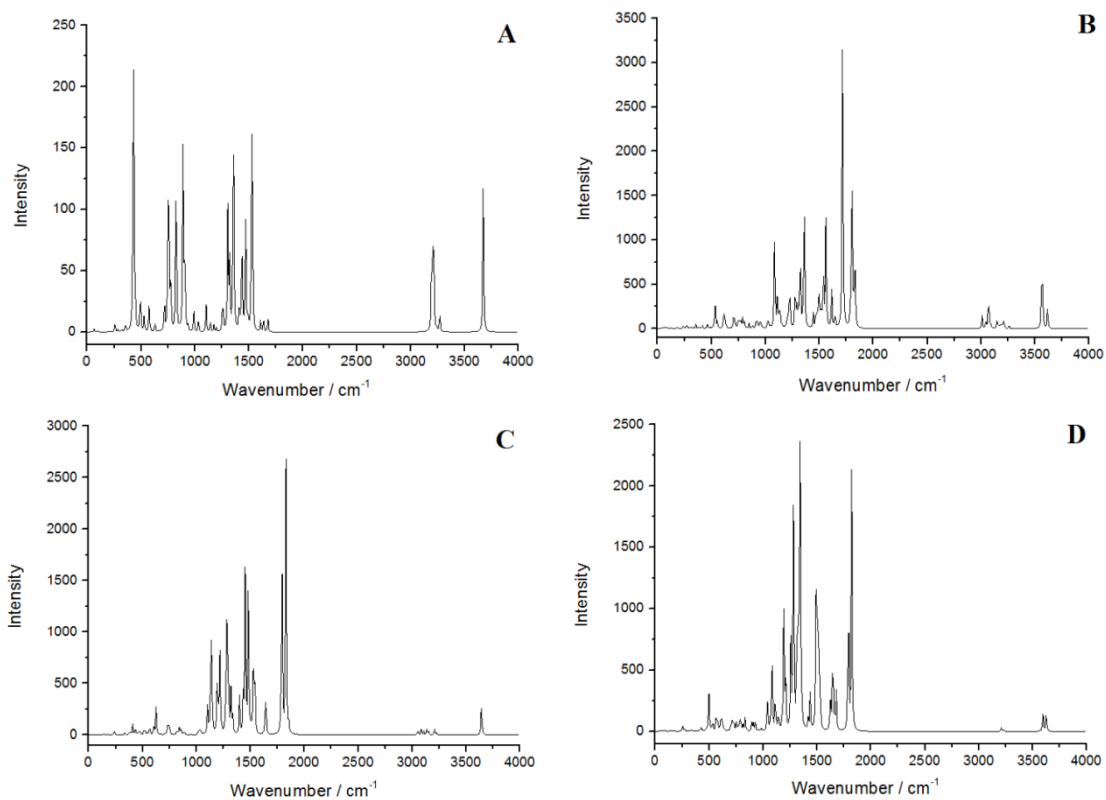
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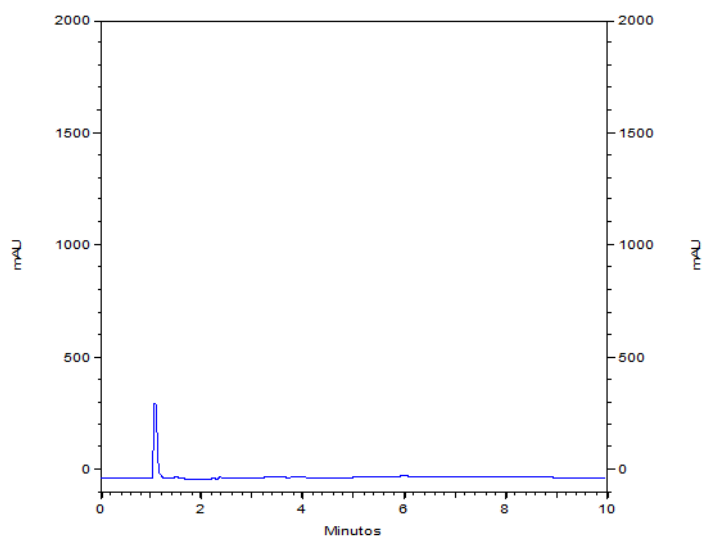
**Figure S1.** Chemical structure of (A) thiabendazole (TB), (B) febantel (FB), (C) toltrazuril (TZ), and (D) fluazuron (FZ).



**Figure S2.** FTIR experimental for (A) thiabendazole (TB), (B) febantel (FB), (C) toltrazuril (TZ), and (D) fluazuron (FZ)



**Figure S3.** FTIR theoretical for (A) thiabendazole (TB), (B) febantel (FB), (C) toltrazuril (TZ), and (D) fluazuron (FZ).



**Figure S4.** Chromatogram referring to the oxidative process using hydrogen peroxide.

**Table S1.** Solubility test of thiabendazole, febantel, toltrazuril, and fluazuron.

	Analytes			
	Thiabendazole	Febantel	Toltrazuril	Fluazuron
Water	insoluble	insoluble	insoluble	insoluble
acetonitrile	slightly soluble	soluble	soluble	soluble
Methanol	low soluble	soluble	soluble	slightly soluble
ethylacetate	slightly soluble	soluble	low soluble	slightly soluble

**Table S2.** System suitability testing for the determination of thiabendazole, febantel, toltrazuril, and fluazuron.

Parameters	USP recommendation	Day	Substance	Minimum	Maximum	RSD, % <sup>b</sup>	Status
Retention time, min.	RSD, % <2	1	Thiabendazole	2.847	2.881	0.41	Approved
			Febantel	5.741	5.787	0.27	Approved
			Toltrazuril	6.081	6.127	0.27	Approved
			Fluazuron	8.041	8.127	0.38	Approved
		2	Thiabendazole	2.847	2.883	0.42	Approved
			Febantel	5.741	5.801	0.34	Approved
			Toltrazuril	6.081	6.141	0.34	Approved
			Fluazuron	8.041	8.161	0.51	Approved
		3	Thiabendazole	2.847	2.873	0.34	Approved
			Febantel	5.727	5.741	0.08	Approved
			Toltrazuril	6.061	6.073	0.08	Approved
			Fluazuron	8.013	8.041	0.12	Approved
Repeatability	RSD, % <2	1	Thiabendazole	7742968	8072674	1.73	Approved
			Febantel	9188943	9633921	1.86	Approved
			Toltrazuril	6210642	6565544	2.07	Approved
			Fluazuron	6962024	7272437	1.46	Approved
		2	Thiabendazole	8256144	8448595	0.99	Approved
			Febantel	9561013	9805610	1.04	Approved
			Toltrazuril	6498809	6711520	1.26	Approved
			Fluazuron	7214386	7418061	1.05	Approved
		3	Thiabendazole	7962055	8157661	0.86	Approved
			Febantel	9247328	9379257	0.54	Approved
			Toltrazuril	6267968	6354686	0.55	Approved
			Fluazuron	6975050	7074112	0.54	Approved
Theoretical plates	> 2000	1	Thiabendazole	8226	9913	6.07	Approved
			Febantel	44812	50032	4.07	Approved
			Toltrazuril	54240	57646	2.12	Approved
			Fluazuron	75518	77964	1.11	Approved
		2	Thiabendazole	8513	9833	6.91	Approved
			Febantel	44848	48363	2.77	Approved
			Toltrazuril	54391	56539	1.64	Approved
			Fluazuron	73443	77716	2.08	Approved
		3	Thiabendazole	8154	9454	5.91	Approved
			Febantel	45501	49359	3.18	Approved
			Toltrazuril	54861	58388	2.42	Approved
			Fluazuron	77288	80865	1.65	Approved

Asymmetry	< 2	1	Thiabendazole	0.96531	0.98398	0.64	Approved
			Febantel	1.00664	1.05137	1.39	Approved
			Toltrazuril	1.01621	1.07067	1.95	Approved
			Fluazuron	1.02364	1.07588	1.66	Approved
		2	Thiabendazole	0.97333	0.98754	0.51	Approved
			Febantel	1.00387	1.04132	1.27	Approved
			Toltrazuril	1.03839	1.09901	1.91	Approved
			Fluazuron	1.00871	1.06743	1.97	Approved
		3	Thiabendazole	0.94481	0.97534	1.07	Approved
			Febantel	1.00398	1.03625	1.25	Approved
			Toltrazuril	1.01379	1.05792	1.46	Approved
			Fluazuron	1.02086	1.04708	1.01	Approved

<sup>a</sup> values of 0.250 mg mL<sup>-1</sup>; <sup>b</sup> values of 6 replicates (n = 6).