Supplementary Materials

Table S1. Chromatographic conditions and instrumentations utilized for the determination of pterostilbene (PT) for the routine normal-phase HPTLC and the sustainable reversed-phase HPTLC techniques.

Chromatographic conditions/instrumentation	Routine normal-phase HPTLC	Sustainable reversed-phase HPTLC
Instrument	CAMAG TLC system (CAMAG, Muttenz, Switzerland)	CAMAG TLC system (CAMAG, Muttenz, Switzerland)
Software	WinCAT's (version 1.4.3.6336, CAMAG, Muttenz, Switzerland)	WinCAT's (version 1.4.3.6336, CAMAG, Muttenz, Switzerland)
Syringe for sample application	CAMAG microliter Syringe (Hamilton, Bonaduz, Switzerland)	CAMAG microliter Syringe (Hamilton, Bonaduz, Switzerland)
TLC plates/stationary phase	10 x 20 cm glass backed plates pre-coated with NP silica gel 60 F254S plates (E-Merck, Darmstadt, Germany)	10 x 20 cm glass backed plates pre-coated with RP silica gel 60 F254S plates (E-Merck, Darmstadt, Germany)
Gas for sample application	Nitrogen	Nitrogen
Development chamber	CAMAG automatic developing chamber 2 (ADC2) (CAMAG, Muttenz, Switzerland)	CAMAG automatic developing chamber 2 (ADC2) (CAMAG, Muttenz, Switzerland)
Chamber saturation time	30 min	30 min
TLC Scanner	CAMAG TLC scanner-III (CAMAG, Muttenz, Switzerland)	CAMAG TLC scanner-III (CAMAG, Muttenz, Switzerland)
Mobile phase	Chloroform-methanol (90:10, $v\ v^{-1}$)	Ethanol-water (80:20, $v\ v^{-1}$)
Development distance on plate	80 mm	80 mm
Development mode	Linear ascending mode	Linear ascending mode
Sample application rate	150 nL s^{-1}	150 nL s^{-1}
Densitometry of scanning mode	Absorbance/reflectance	Absorbance/reflectance
Scanning wavelength of FBN	302 nm	302 nm

Table S2. Results of instrumental precision for the routine normal-phase HPTLC and the sustainable reversed-phase HPTLC techniques (mean ± SD; n = 6).

Conc. (ng band^{-1})	Area ± SD	Standard error	CV (%)
	Routine normal-phase HPTLC		
150	12745 ± 392	160.06	3.07
	Sustainable revered-phase HPTLC		
500	22122 ± 91	37.15	0.41

Table S3. Results of robustness analysis by changing total run length for the routine normal-phase HPTLC and the sustainable reversed-phase HPTLC techniques (mean ± SD; n = 6).

Conc.	Total run length (mm)			Results		
(ng band^{-1})	Original	Used		Area ± SD	% CV	R_f
Routine normal-phase HPTLC						
150	80	82	+2.0	11132 ± 276	2.47	0.60
		80	0.0	11862 ± 284	2.39	0.62
		78	-2.0	12178 ± 299	2.42	0.65
Sustainable reversed-phase HPTLC						
Total run length (mm)						
500	80	82	+2.0	23976 ± 106	0.44	0.58
		80	0.0	24132 ± 118	0.48	0.60
		78	-2.0	24654 ± 122	0.49	0.62

Table S4. Results of robustness analysis by changing the saturation time for the routine normal-phase HPTLC and the sustainable reversed-phase HPTLC techniques (mean ± SD; n = 6).

Conc.	Saturation time (min)			Results		
(ng band^{-1})	Original	Used		Area ± SD	% CV	R_f
Routine normal-phase HPTLC						
		32	+2.0	10932 ± 264	2.41	0.61
150	30	30	0.0	11221 ± 292	2.60	0.62
		28	-2.0	12321 ± 303	2.45	0.63
Sustainable reversed-phase HPTLC						
Saturation time (min)						
		32	+2.0	22868 ± 107	0.46	0.58
500	30	30	0.0	23243 ± 111	0.47	0.60
		28	-2.0	24815 ± 117	0.47	0.61

Table S5. Results of robustness analysis by changing the detection wavelength for the routine normal-phase HPTLC and the sustainable reversed-phase HPTLC techniques (mean ± SD; n = 6).

Conc.	Detection wavelength (nm)			Results		
(ng band^{-1})	Original	Used		Area ± SD	% CV	R_f
Routine normal-phase HPTLC						
150	302	304	+2.0	10122 ± 270	2.66	0.60
		302	0.0	12223 ± 275	2.24	0.62
		300	-2.0	10766 ± 290	2.69	0.62
Sustainable reversed-phase HPTLC						
Detection wavelength (nm)						
500	302	304	+2.0	21128 ± 121	0.57	0.58
		302	0.0	23892 ± 128	0.53	0.60
		300	-2.0	22982 ± 132	0.57	0.60

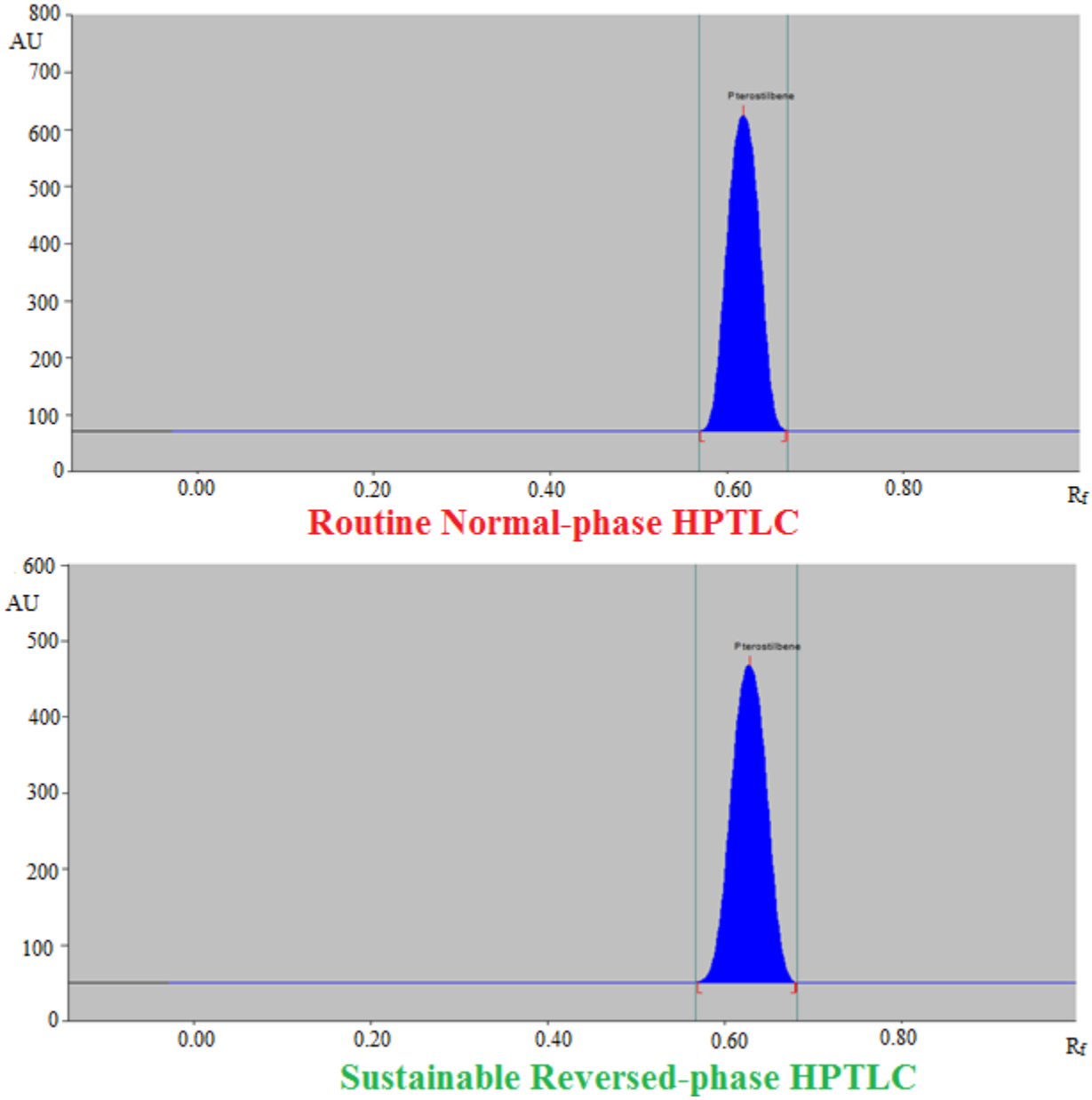

Figure S1. Representative chromatograms of PT in commercial formulation recorded using routine normal-phase HPTLC and sustainable reversed-phase HPTLC techniques.