Table S1: The Decision matrix (S/N ratios), weighted normalized decision matrix, and single response for the TOPSIS method.

Mix No.	Response	Signal to Noise (S/N ratios) Decision matrix					Weighted normalized decision matrix						
		C28	T28	PC	S		vi1	vi2	vi3	vi4	S+	S-	Ci
	Weight	0.36	0.12	0.2	0.32								
1		35.01	10.42	-72.00	33.98		0.129	0.051	-0.064	0.104	0.009	0.031	0.778
2		31.78	7.16	-73.57	34.81		0.117	0.035	-0.066	0.107	0.021	0.012	0.360
3		29.95	5.33	-74.90	33.98		0.110	0.026	-0.067	0.104	0.032	0.001	0.038
4		32.63	8.03	-73.46	35.56		0.120	0.039	-0.066	0.109	0.015	0.017	0.534
5		32.08	7.51	-74.43	36.90		0.118	0.037	-0.067	0.113	0.018	0.016	0.472
6		33.74	9.14	-75.65	33.98		0.124	0.045	-0.068	0.104	0.012	0.023	0.654
7		32.31	7.71	-74.33	33.98		0.119	0.038	-0.067	0.104	0.019	0.015	0.436
8		35.00	10.39	-75.57	36.26		0.129	0.051	-0.068	0.111	0.004	0.032	0.894
9		31.19	6.57	-76.34	33.98		0.115	0.032	-0.068	0.104	0.025	0.008	0.231
	a	98.02	24.56	223.45	104.53	A+	0.129	0.051	-0.064	0.113			
						A-	0.110	0.026	-0.068	0.104			

Table S2: Calculated (S/N) ratios and Normalized Decision Matrix for FTOPSIS.

Mix No.	Response	C28	T28	PC	S		Normalized decision matrix vi1	vi2	vi3	vi4
1		35.01	10.42	-72.00	33.98		0.357[b]	0.424	-0.322	0.325
2		31.78	7.16	-73.57	34.81		0.324	0.292	-0.329	0.333
3		29.95	5.33	-74.90	33.98		0.306	0.217	-0.335	0.325
4		32.63	8.03	-73.46	35.56		0.333	0.327	-0.329	0.340
5		32.08	7.51	-74.43	36.90		0.327	0.306	-0.333	0.353
6		33.74	9.14	-75.65	33.98		0.344	0.372	-0.339	0.325
7		32.31	7.71	-74.33	33.98		0.330	0.314	-0.333	0.325
8		35.00	10.39	-75.57	36.26		0.357	0.423	-0.338	0.347
9		31.19	6.57	-76.34	33.98		0.318	0.268	-0.342	0.325
	a	98.02	24.56	223.45	104.53	A+	0.357	0.424	-0.322	0.353
						A-	0.306	0.217	-0.342	0.325

[b](35.01/98.02)

Table S3: Fuzzy TOPSIS application: Weighted normalized decision matrix and defuzzification results.

	Weighted normalized fuzzy decision matrix															
	(0.276	0.321	0.321	0.391)[a]	0.103	0.143	0.143	0.174	0.207	0.25	0.25	0.348	0.207	0.286	0.286	0.348
MIX No.	vc28				vt28				vpc				vs			
1	0.099[b]	0.115[c]	0.115[d]	0.140[e]	0.044	0.061	0.061	0.074	-0.067	-0.081	-0.081	-0.112	0.067	0.093	0.093	0.113
2	0.089	0.104	0.104	0.127	0.030	0.042	0.042	0.051	-0.068	-0.082	-0.082	-0.115	0.069	0.095	0.095	0.116
3	0.084	0.098	0.098	0.119	0.022	0.031	0.031	0.038	-0.069	-0.084	-0.084	-0.117	0.067	0.093	0.093	0.113
4	0.092	0.107	0.107	0.130	0.034	0.047	0.047	0.057	-0.068	-0.082	-0.082	-0.114	0.070	0.097	0.097	0.118
5	0.090	0.105	0.105	0.128	0.031	0.044	0.044	0.053	-0.069	-0.083	-0.083	-0.116	0.073	0.101	0.101	0.123
6	0.095	0.110	0.110	0.135	0.038	0.053	0.053	0.065	-0.070	-0.085	-0.085	-0.118	0.067	0.093	0.093	0.113
7	0.091	0.106	0.106	0.129	0.032	0.045	0.045	0.055	-0.069	-0.083	-0.083	-0.116	0.067	0.093	0.093	0.113
8	0.099	0.115	0.115	0.140	0.044	0.060	0.060	0.074	-0.070	-0.085	-0.085	-0.118	0.072	0.099	0.099	0.121
9	0.088	0.102	0.102	0.124	0.028	0.038	0.038	0.047	-0.071	-0.085	-0.085	-0.119	0.067	0.093	0.093	0.113
A+ MAX	0.099	0.115	0.115	0.140	0.044	0.061	0.061	0.074	-0.067	-0.081	-0.081	-0.112	0.073	0.101	0.101	0.123
A- MIN	0.084	0.098	0.098	0.119	0.022	0.031	0.031	0.038	-0.071	-0.085	-0.085	-0.119	0.067	0.093	0.093	0.113

[a] Trapezoidal fuzzy weights   [b] 0.357*0.276=0.099   [c] 0.357*0.321=0.115   [d] 0.357*0.321=0.115   [e] 0.357*0.391=0.140

Table S4: Fuzzy TOPSIS Results.

MIX No.	The distance from an alternative i to the ideal solution S+	The distance from an alternative i to the negative ideal solution S-	FTOPSIS ranking scores Ci
1	0.008[a]	0.052[b]	0.866[c]
2	0.037	0.022	0.375
3	0.058	0.002	0.029
4	0.027	0.033	0.544
5	0.030	0.030	0.504
6	0.024	0.036	0.598
7	0.036	0.024	0.405
8	0.006	0.054	0.896
9	0.048	0.011	0.191

[a] $\{1/4*[(0.099-0.099)^2+(0.115-0.115)^2+(0.115-0.115)^2+(0.140-0.140)^2]\}^{0.5}+$
$\{1/4*[(0.044-0.044)^2+(0.061-0.061)^2+(0.061-0.061)^2+(0.074-0.074)^2]\}^{0.5}+$
$\{1/4*[(-0.067+0.067)^2+(-0.081+0.081)^2+(-0.081+0.081)^2+(-0.112+0.112)^2]\}^{0.5}+$
$\{1/4*[(0.067-0.073)^2+(0.093-0.101)^2+(0.093-0.101)^2+(0.113-0.123)^2]\}^{0.5}=0.008.$

[b] $\{1/4*[(0.099-0.084)^2+(0.115-0.098)^2+(0.115-0.098)^2+(0.140-0.119)^2]\}^{0.5}+$
$\{1/4*[(0.044-0.022)^2+(0.061-0.031)^2+(0.061-0.031)^2+(0.074-0.038)^2]\}^{0.5}+$
$\{1/4*[(-0.067+0.071)^2+(-0.081+0.085)^2+(-0.081+0.85)^2+(-0.112+0.119)^2]\}^{0.5}+$
$\{1/4*[(0.067-0.067)^2+(0.093-0.093)^2+(0.093-0.093)^2+(0.113-0.113)^2]\}^{0.5}=0.052.$

[c] $0.052/(0.008+0.052)=0.866.$