

## Supplemental Material

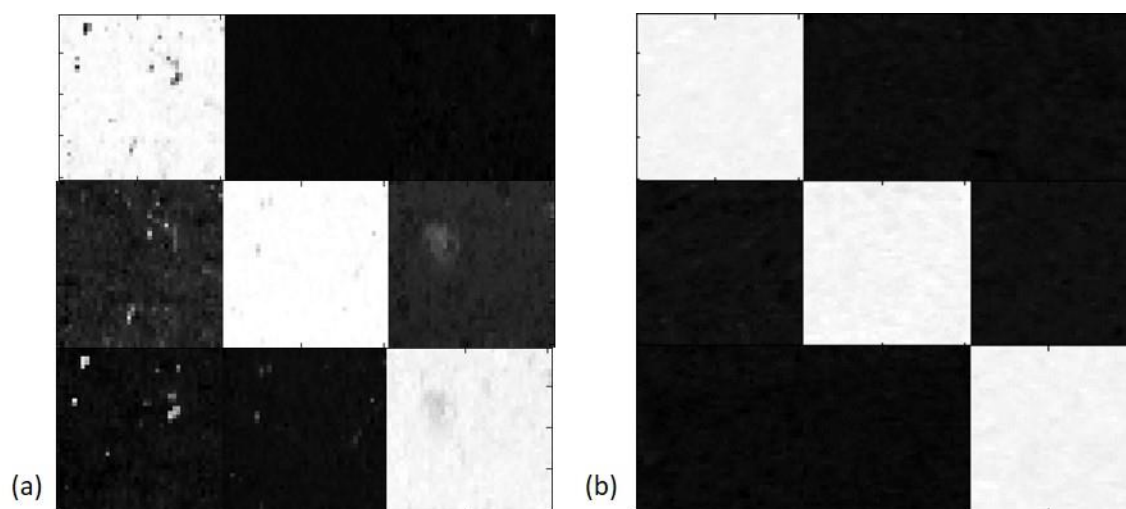
### Comparison of Raman and Near-Infrared Chemical Mapping for the Analysis of Pharmaceutical Tablets

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**Figure S1.** PLS Classification maps of the pure components, (left) microcrystalline cellulose, (centre) eletriptan hydrobromide, and (right) saccharin, at (top) class one– microcrystalline cellulose, (middle) class two - saccharin and (bottom) class three–eletriptan hydrobromide, for the (a) Raman and (b) NIR PLS model, where white pixels represent the belonging to the class.

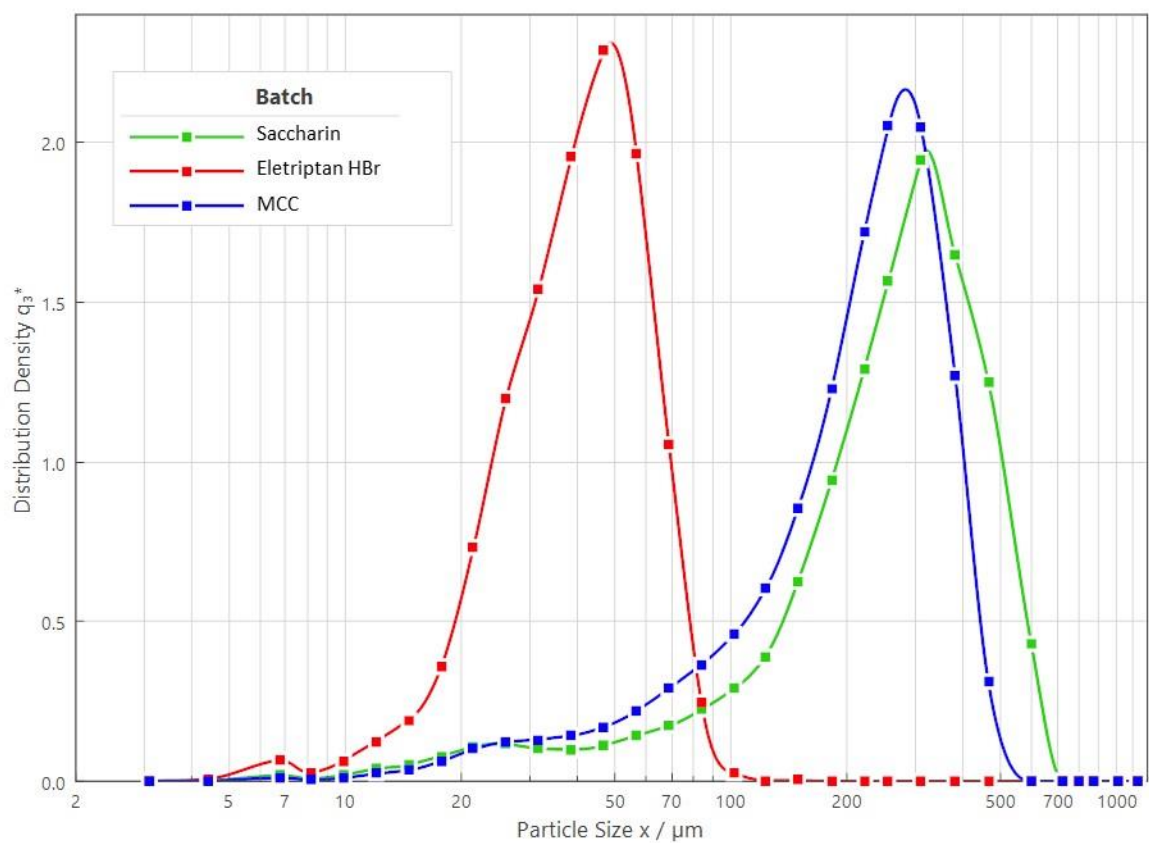


Figure S2. QICPIC volume particle size distributions histogram of the raw materials where red = eletriptan hydrobromide, blue = microcrystalline cellulose and green = saccharin.

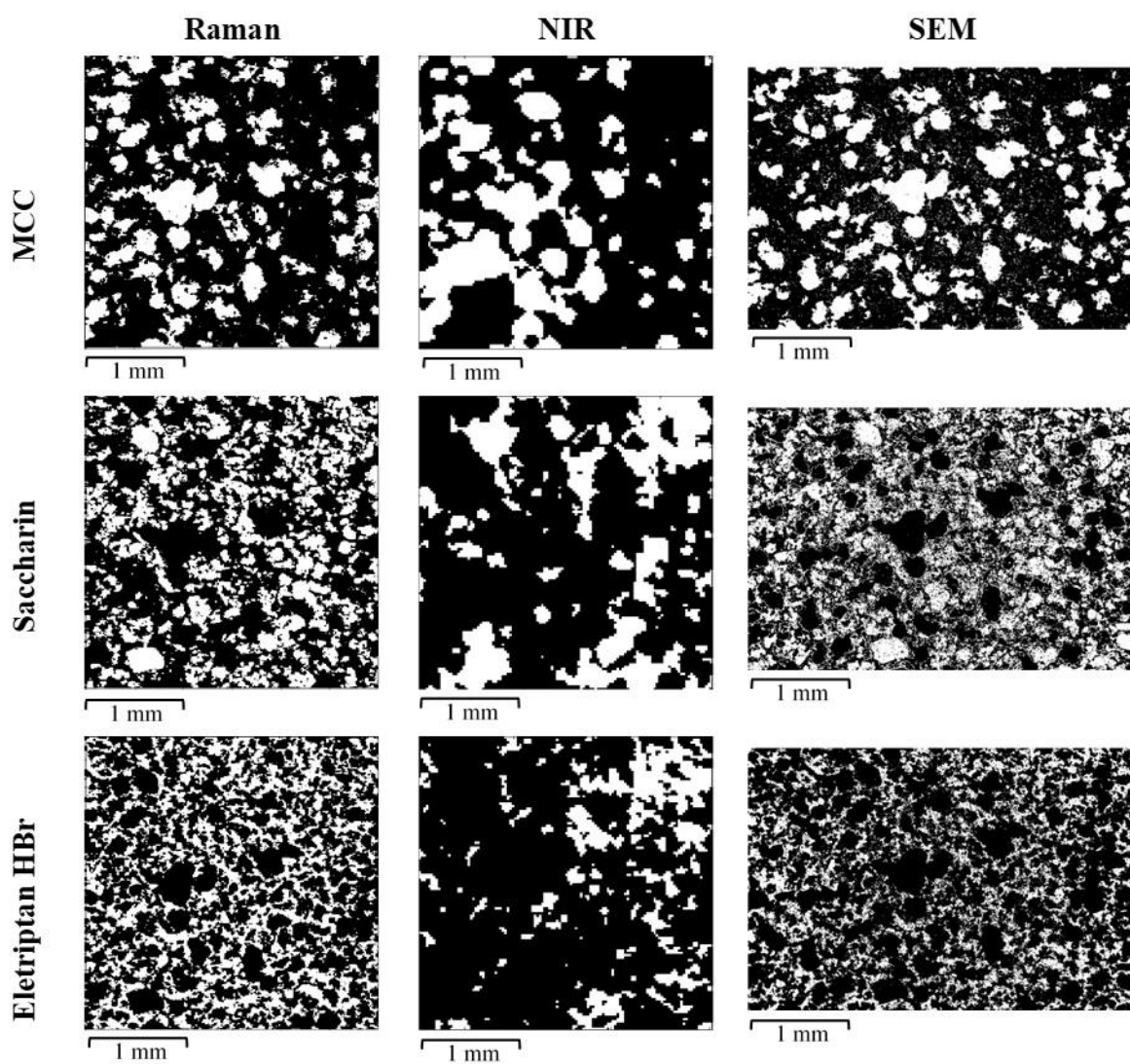


Figure S3. Binary image of the spatial distribution of the individual components obtained by Raman, NIR, and SEM-EDX.

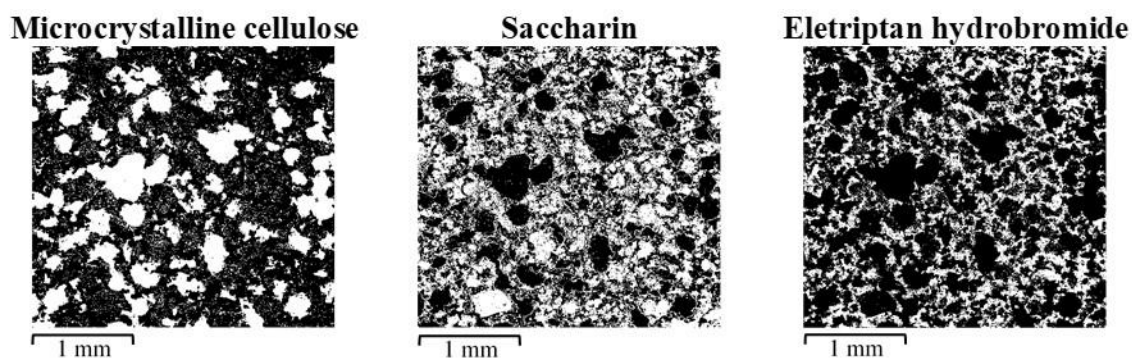


Figure S4. Cropped binary SEM-EDX images used for quantitative analysis.



Figure S5. A schematic identifying each quadrant number in the chemical image.

Table SI. QICPIC volume particle size values of the raw materials.

Material	D[v.0.1] ( $\mu\text{m}$ )	D[v.0.5] ( $\mu\text{m}$ )	D[v.0.9] ( $\mu\text{m}$ )	Mean by volume ( $\mu\text{m}$ )
Eletriptan hydrobromide	21.45	41.11	64.42	42.22
Saccharin	277.71	486.09	486.09	281.85
Microcrystalline Cellulose	69.61	227.75	359.90	225.20

Table SII. A table showing the domain distribution statistics for each component in the Raman, NIR, and SEM-EDX chemical images, where Q = quadrant.

		Number statistics				Percentage cover statistics			
Data acquisition method		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
MCC	Raman	92	86	86	106	31.99	33.08	20.31	21.54
	NIR	16	4	14	17	34.01	48.87	11.78	17.06
	SEM-EDX	128	121	131	135	36.18	35.46	27.30	28.08
Eletriptan HBr	Raman	140	103	95	110	24.87	36.67	38.95	36.29
	NIR	23	34	24	34	6.87	6.41	40.42	18.42
	SEM-EDX	113	104	78	94	29.27	30.43	36.20	34.98
Saccharin	Raman	115	121	119	133	36.08	31.71	40.17	39.07
	NIR	20	16	13	16	19.79	18.96	38.81	32.40
	SEM-EDX	87	110	104	87	45.68	43.99	47.16	47.18