Supplementary tables and figures

Supplementary Table 1: Micromeritic properties of Amlodipine-Xylitol granules

Batch Code	Bulk density (g/ml) Mean ± SD*	Tapped density (g/ml) Mean ± SD*	Angle of repose (θ) Mean ± SD*	Carr's Index(CI) % Mean ± SD*	Hausner's ratio (HR) Mean ± SD*
G1	0.503± 0.29	0.591 ± 0.19	25.6 ±0.28	14.91±0.13	1.175±0.16
G2	0.508 ±0.32	0.598 ± 0.27	24.1 ±0.25	15.05± 0.17	1.177±0.17
G3	0.490± 0.39	0.583 ± 0.32	26.7 ±0.23	15.91±0.23	1.189±0.14

*Standard Deviation, n =3

Supplementary Table 2: Drug content in Amlodipine-Xylitol granule formulations

Batch code	Percentage drug content Mean ± SD *
G1	98.52±0.31
G2	98.02±0.34
G3	97.69±0.22

* Standard Deviation, n =3

Supplementary Table 3: Drug release from Amlodipine-Xylitol granules

Batch code	**Time (min)** Mean ± SD *					
	10	**20**	**30**	**40**	**50**	**60**
G1	25.95±3.11	43.81±2.04	60.07±3.17	82.85±2.21	91.05±1.73	97.25±2.29
G2	24.32±2.12	32.45±1.95	37.35±2.69	50.37±3.56	68.26±2.19	95.91±2.35
G3	30.81±2.29	40.57±3.12	45.48±2.21	63.37±2.58	66.68±1.97	86.23±2.33

* Standard Deviation, n =3

Supplementary Table 4: Evaluation of micromeritic properties of Telmisartan powder blend

Batch Code	Bulk density (g/ml) Mean ± SD*	Tapped density (g/ml) Mean ± SD*	Angle of repose (θ) Mean ± SD*	Carr's Index(CI) % Mean ± SD*	Hausner's ratio (HR) Mean ± SD*
C1	0.524±0.25	0.617± 0.22	30.04± 0.28	15.07± 0.38	1.177± 0.28
C2	0.514± 0.14	0.612± 0.23	30.17± 0.18	16.01± 0.22	1.191± 0.32
C3	0.517± 0.17	0.618± 0.24	31.25± 0.21	16.34± 0.16	1.195± 0.21
C4	0.509±0.21	0.611± 0.25	32.01± 0.23	16.69± 0.38	1.200± 0.28

*Standard Deviation, n=3

Supplementary Table 5: Drug release from core tablets of Telmisartan

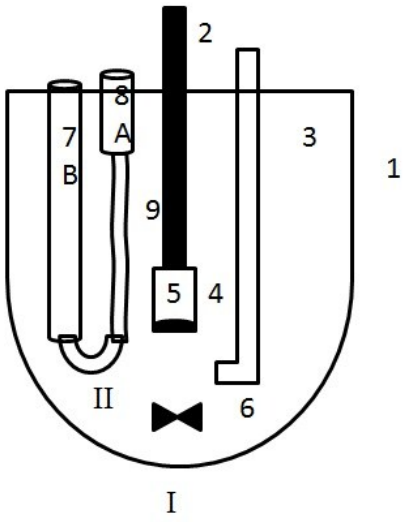
Time(min)	C1 Mean ± SD*	C2 Mean ± SD*	C3 Mean ± SD*	C4 Mean ± SD*
5	8.63±1.23	11.54±2.15	11.91±3.12	18.28±1.998
10	17.88±2.96	34.24±2.19	47.61±3.78	44.56±1.34
15	23.40±2.35	40.44±2.81	56.05±3.21	57.22±3.31

20	28.74±3.21	44.14±2.92	61.18±2.94	65.14±1.87
25	32.69±2.95	51.46±3.11	61.85±3.56	71.22±2.32
30	39.99±2.75	55.18±2.45	65.04±2.91	74.77±1.95
35	42.86±1.95	58.08±1.95	66.84±1.88	76.29±20.7
40	52.97±2.11	59.31±3.17	67.81±2.34	77.82±2.11
45	53.63±3.10	63.04±2.50	71.56±2.22	77.99±2.97
50	56.52±2.52	63.72±2.65	72.54±2.96	78.19±3.21
55	58.02±3.54	64.41±3.39	72.96±3.44	78.99±1.93

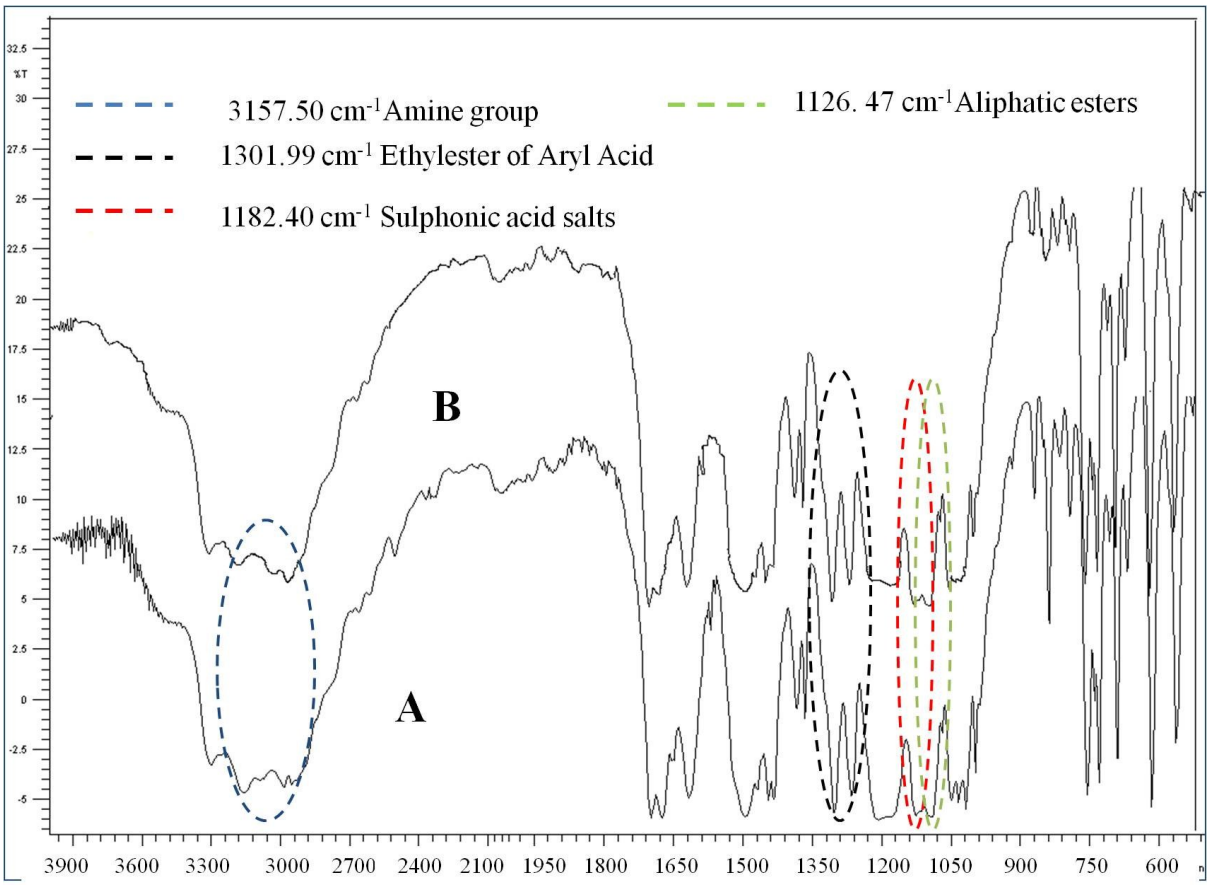
*Standard Deviation, n =3

Supplementary Table 6: Evaluation of micromeritic properties of erodible tablet blends

Batch code	Angle of repose (θ) Mean ± SD*	Carr's Index(CI) % Mean ± SD*	Hausner's ratio (HR) Mean ± SD*
GG (E4)	24.05±1.92	12.89±0.96	1.164±0.013
GG (E5)	26.48±1.31	16.25±1.02	1.188±0.017
GG (E6)	28.45±1.69	19.56±0.49	1.278±0.015
XG (E4)	25.92±1.52	11.67±1.44	1.122±0.02
XG (E5)	26.12±1.84	14.09±1.15	1.149±0.0013
XG (E6)	27.91±0.96	15.96±1.72	1.229±0.0115

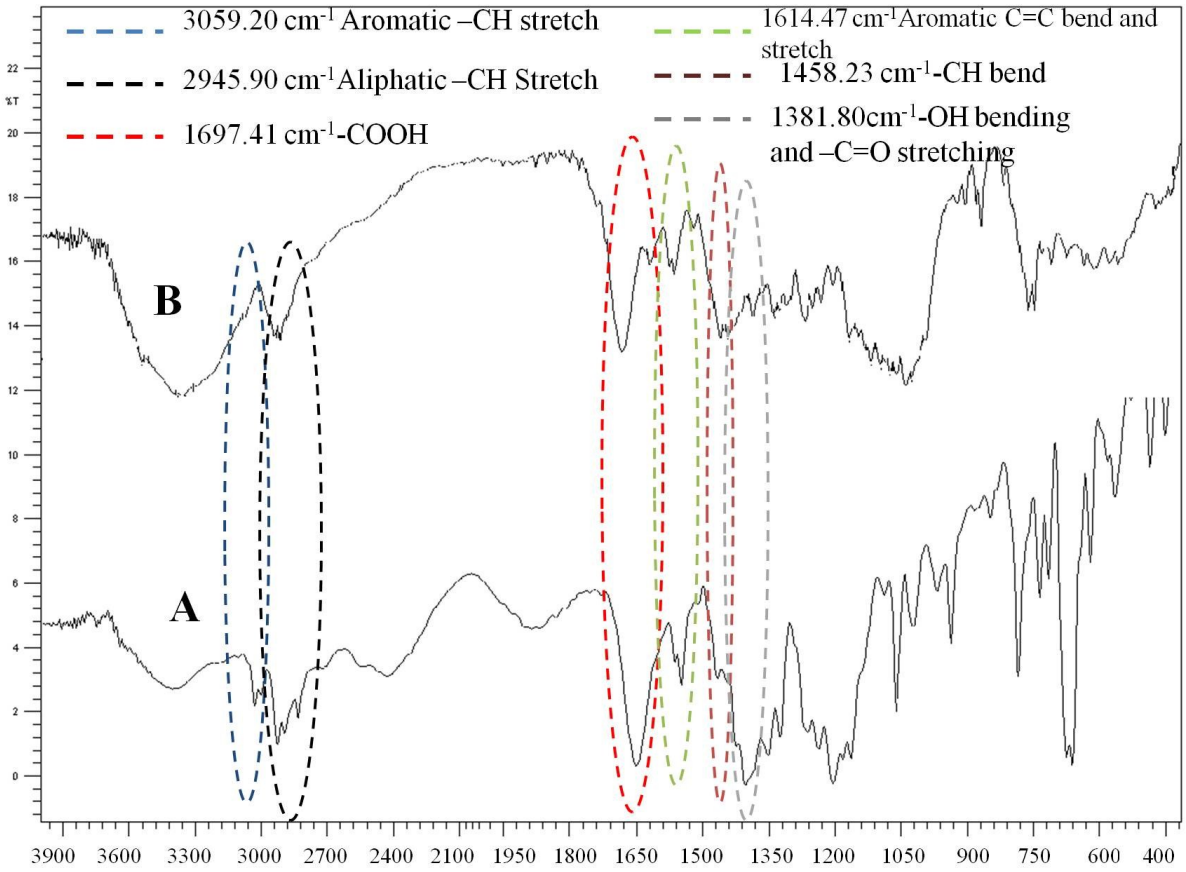


Supplementary Fig. 1: Continuous dissolution-absorption system I) Dissolution-absorption system, II). Absorption apparatus. 1)Dissolution flask; 2)Rotating shaft; 3) Dissolution medium; 4) Paddle; 5)Oxygen tube; 6)Capsule; 7) Tube B; 8. Tube A; 9) Everted rat intestinal sac



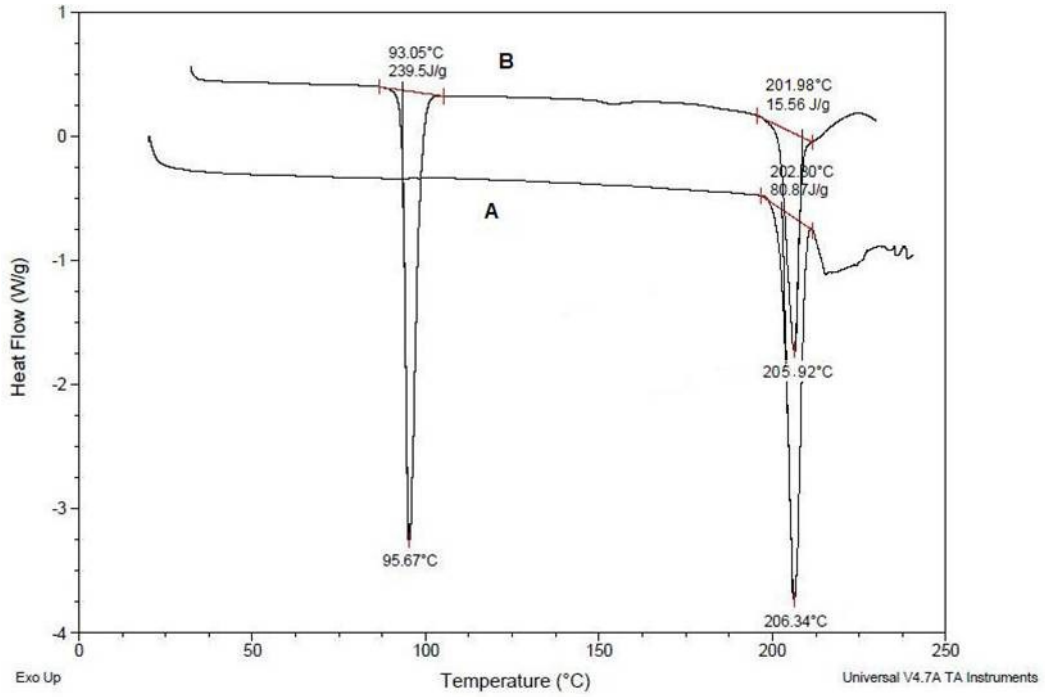
Supplementary Fig. 2: FTIR spectra of (A) Pure AMLO, (B) AMLO-xylitol granules

Pure AMLO showed IR absorption bands at 3157.50 cm^{-1} for the stretching vibration of N–H bond in the dihydropyridine ring; 1301.99 cm^{-1} for the ethyl ester; 1182.40 cm^{-1} for sulphonic acid salts and 1126.47 cm^{-1} for the aliphatic esters. These characteristic IR absorption bands of AMLO were all retained in the granules. These results indicate that there was no interaction between the drug and granule excipients.

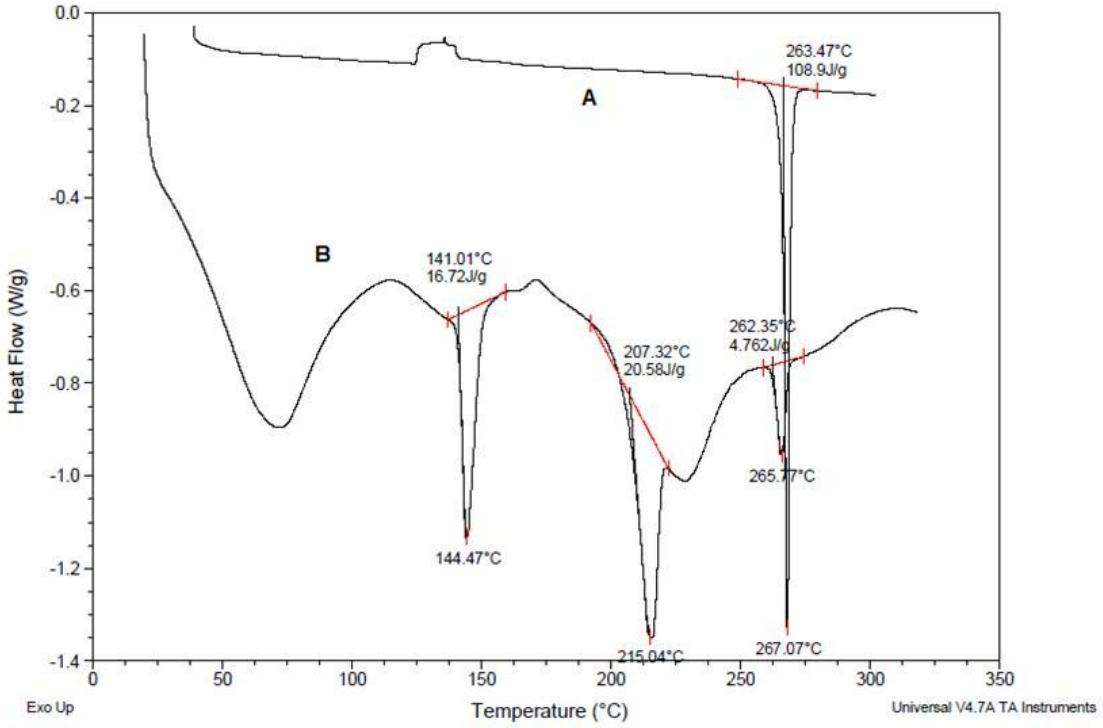


Supplementary Fig. 3: FTIR spectra of (A) Pure TELMI and (B) TELMI powder blend

IR spectra of telmisartan showed a characteristic peak at 3059.20 cm^{-1} for Aromatic –CH stretch; 2945.90 cm^{-1} for Aliphatic -CH stretch; 1697.41 cm^{-1} for –COOH; 1614.47 cm^{-1} for Aromatic C=C bending and stretching; 1458.23 cm^{-1} for C-H bending and 1381.80 cm^{-1} for –OH bending and –C=O stretching vibrations. Characteristic peaks of telmisartan seemed to be preserved in physical mixture which proved that there was no chemical interaction between telmisartan and tablet components.



Supplementary Fig. 4: DSC thermograms of (A) Pure AMLO, (B) AMLO-xylitol granules



Supplementary Fig. 5: DSC thermograms of (A) Pure TELMI and (B) TELMI core tablet

The melting point of Amlodipine(Supplementary Fig. 4) was in the range of 209.95 to 210.56 ºC and that of Telmisartan(Supplementary Fig. 5) was between 275.78 to 277.82 ºC. All the thermograms showed sharp endothermic transitions corresponding to their melting points, which indicated that the drugs were highly stable in their corresponding formulations.