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APPENDICES

Appendix A

Calibration Curve

The concentration versus absorbance tables of diclofenac sodium in methanol at 281 nm, 0.1 N HCl acid at 275 nm and in phosphate buffer pH 6.8 at 277 nm are presented in Tables 29 - 31, and the standard curves of diclofenac sodium in these mediums are illustrated in Figures 72 - 74, respectively.

Table 29 Absorbance of diclofenac sodium in methanol at 281 nm

Concentration (mcg/ml)	Absorbance
0	0
5	0.209
10	0.421
15	0.636
20	0.849
25	1.062

Figure 72 Calibration curve of diclofenac sodium in methanol at 281 nm

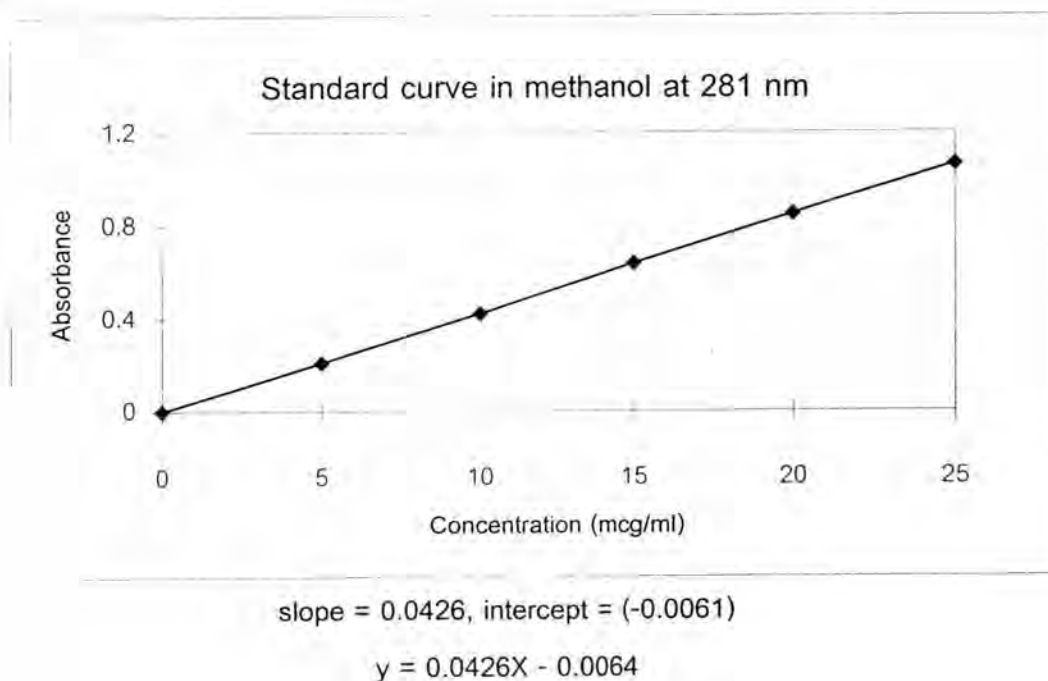
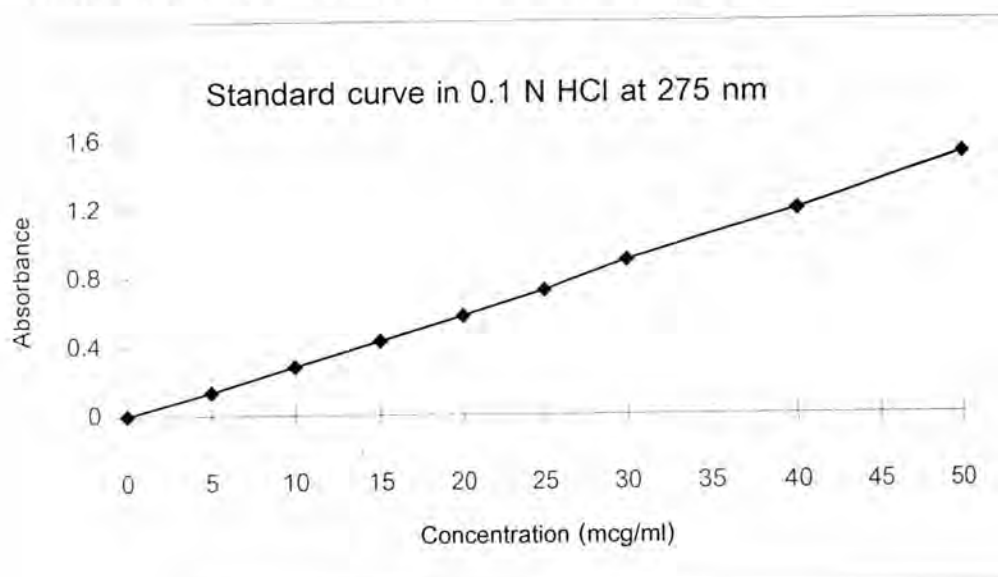


Table 30 Absorbance of diclofenac sodium in 0.1 N HCl acid at 275 nm

Concentration (mcg/ml)	Absorbance
0	0
5	0.135
10	0.281
15	0.428
20	0.572
25	0.720
30	0.895
40	1.189
50	1.513

Figure 73 Calibration curve of diclofenac sodium in 0.1 N HCl at 275 nm



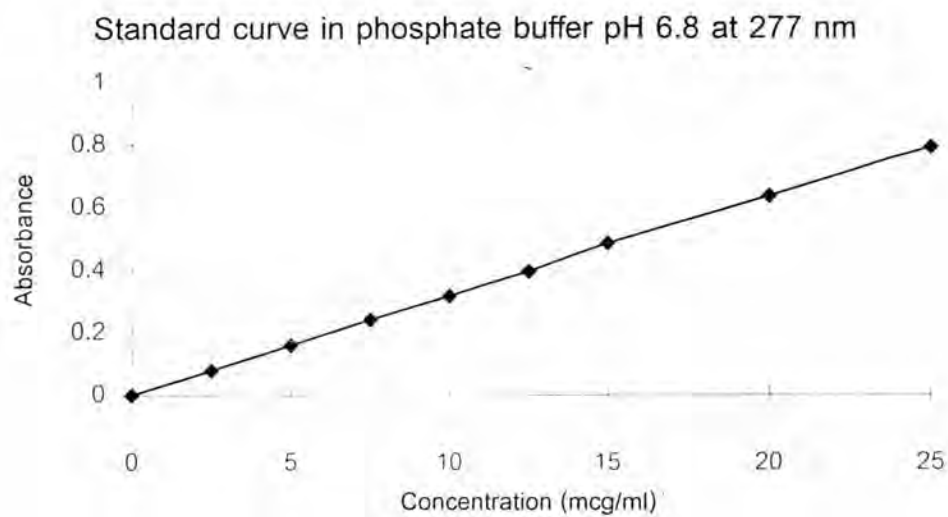
slope = 0.150314, intercept = (-0.02093)

$$y = 0.150314X - 0.02093$$

Table 31 Absorbance of diclofenac sodium in phosphate buffer pH 6.8 at 277 nm

Concentration (mcg/ml)	Absorbance
0	0
2.5	0.078
5.0	0.159
7.5	0.241
10.0	0.316
12.5	0.395
15.0	0.484
20.0	0.635
25.0	0.790

Figure 74 Calibration curve of diclofenac sodium in phosphate buffer pH 6.8 at 277 nm



slope = 0.079218, intercept = 0.001064

$$y = 0.079218X + 0.001064$$

Appendix B

Percentage of Drug Releases, Release Rates Release Rates Against Amount and Reciprocal of Amount.

Table 32 Percentage amount of diclofenac sodium release from reference capsules, reference tablets and commercial products (Voltaren SR).

Formulation	Time	Time1/2	pH - change system					Formulation	pH - change system					
			1	2	3	mean	SD		1	2	3	mean	SD	
Reference capsules	0	0	0	0	0	<u>0</u>	0	Reference tablets	0	0	0	<u>0</u>	0	
	0.25	0.50	3.0	3.6	3.2	<u>3.3</u>	0.3055		0.6	0.6	0.5	<u>0.6</u>	0.0577	
	0.50	0.71	3.1	3.4	3.4	<u>3.3</u>	0.1732		0.6	0.6	0.5	<u>0.6</u>	0.0577	
	1	1.00	3.2	3.3	3.7	<u>3.4</u>	0.2646		0.6	0.6	0.5	<u>0.6</u>	0.0577	
	2	1.41	3.2	3.7	3.8	<u>3.6</u>	0.3214		0.7	0.7	0.6	<u>0.7</u>	0.0577	
	3	1.73	83.6	71.5	58.9	<u>71.3</u>	12.3508		24.0	16.3	37.6	<u>26.0</u>	10.7853	
	4	2.00	97.4	97.4	96.6	<u>97.1</u>	0.4619		76.7	46.0	94.6	<u>72.4</u>	24.5793	
	6	2.45	100.5	100.8	99.9	<u>100.4</u>	0.4582		97.2	96.6	98.5	<u>97.4</u>	0.9712	
	9	3.00	-	-	-	-	-		-	-	-	-	-	-
	12	3.46	-	-	-	-	-		-	-	-	-	-	-
	16	4.00	-	-	-	-	-		-	-	-	-	-	-
	20	4.47	-	-	-	-	-		-	-	-	-	-	-
24	4.90	-	-	-	-	-	-	-	-	-	-	-		

Formulation	Time	Time1/2	pH - change system										
			1	2	3				4	5	6	mean	SD
Voltaren SR* tablets	0	0	0	0	0				0	0	0	<u>0</u>	0
	0.25	0.50	1.7	1.1	1.1				1.2	1.4	1.4	<u>1.3</u>	0.2317
	0.50	0.71	0.8	0.8	0.8				0.8	0.9	0.9	<u>0.8</u>	0.0516
	1	1.00	0.8	0.8	0.8				0.8	0.9	0.9	<u>0.8</u>	0.0516
	2	1.41	0.9	0.8	0.8				0.8	0.9	0.8	<u>0.8</u>	0.0516
	3	1.73	4.7	4.8	5.0				5.9	5.5	6.2	<u>5.4</u>	0.6156
	4	2.00	9.1	8.4	9.9				11.6	10.6	11.6	<u>10.2</u>	1.3130
	6	2.45	22.2	22.5	24.2				26.9	26.4	26.2	<u>24.7</u>	2.0646
	9	3.00	41.8	42.6	43.0				43.2	44.4	42.3	<u>42.9</u>	0.8954
	12	3.46	52.4	57.5	53.3				54.7	56.1	53.4	<u>54.6</u>	1.9304
	16	4.00	64.4	67.0	64.8				65.8	68.1	63.6	<u>65.6</u>	1.6928
	20	4.47	73.6	74.5	69.7				70.4	75.2	70.0	<u>72.2</u>	2.4728
24	4.90	79.1	80.0	77.1				79.7	82.1	76.3	<u>79.0</u>	2.0974	

* Dissolution test of Voltaren SR was done in 6 determinations

Table 33 Percentage amount of diclofenac sodium spray dried powders release from Formulation A1-A5.

Formulation	Time	Time1/2	pH - change system					Formulation	pH - change system					
			1	2	3	mean	SD		1	2	3	mean	SD	
A1	0	0	0	0	0	0	0	A2	0	0	0	0	0	
	0.25	0.50	2.0	1.4	1.6	<u>1.7</u>	0.3055		2.6	2.4	2.8	<u>2.6</u>	0.2000	
	0.50	0.71	2.0	1.4	1.6	<u>1.7</u>	0.3055		2.6	2.4	2.6	<u>2.5</u>	0.0577	
	1	1.00	2.2	1.7	1.8	<u>1.9</u>	0.2646		3.0	2.9	2.8	<u>2.9</u>	0.1000	
	2	1.41	2.6	2.0	2.0	<u>2.2</u>	0.3464		2.9	2.9	3.1	<u>3.0</u>	0.1155	
	3	1.73	20.2	17.9	17.0	<u>18.4</u>	1.6502		84.0	70.2	65.1	<u>73.1</u>	9.7780	
	4	2.00	25.4	25.5	22.7	<u>24.5</u>	1.5885		86.7	75.8	68.9	<u>77.1</u>	8.9746	
	6	2.45	33.1	33.6	29.8	<u>32.2</u>	2.0648		88.7	79.4	73.9	<u>80.7</u>	7.4809	
	9	3.00	41.1	40.5	36.4	<u>39.3</u>	2.5580		92.4	85.4	80.8	<u>86.2</u>	5.8412	
	12	3.46	48.1	47.4	42.6	<u>46.0</u>	2.9939		95.1	89.5	85.4	<u>90.0</u>	4.8693	
	16	4.00	-	-	-	-	-		-	-	-	-	-	-
	20	4.47	-	-	-	-	-		-	-	-	-	-	-
24	4.90	65.4	64.7	58.0	<u>62.7</u>	4.0853	101.3	99.7	96.1	<u>99.0</u>	2.6633			
A3	0	0	0	0	0	0	0	A4	0	0	0	0	0	
	0.25	0.50	2.3	2.3	2.4	<u>2.3</u>	0.0577		2.8	2.9	2.5	<u>2.7</u>	0.2082	
	0.50	0.71	2.4	2.6	2.4	<u>2.5</u>	0.1155		3.0	2.8	2.6	<u>2.8</u>	0.2000	
	1	1.00	2.6	2.6	2.9	<u>2.7</u>	0.1732		2.7	2.6	2.8	<u>2.7</u>	0.1000	
	2	1.41	2.9	2.8	2.9	<u>2.9</u>	0.0577		2.7	2.7	3.0	<u>2.8</u>	0.1732	
	3	1.73	66.9	64.7	61.0	<u>64.2</u>	2.9816		61.2	60.7	61.3	<u>61.1</u>	0.3214	
	4	2.00	71.2	70.5	67.4	<u>69.7</u>	2.0224		68.3	67.6	69.3	<u>68.4</u>	0.8544	
	6	2.45	75.7	75.3	74.3	<u>75.1</u>	0.7211		69.7	75.6	70.7	<u>72.0</u>	3.1575	
	9	3.00	80.6	81.7	82.4	<u>81.6</u>	0.9074		74.0	77.2	75.7	<u>75.6</u>	1.6010	
	12	3.46	84.2	84.9	86.3	<u>85.1</u>	1.0693		77.4	80.9	79.2	<u>79.2</u>	1.7502	
	16	4.00	-	-	-	-	-		-	-	-	-	-	-
	20	4.47	-	-	-	-	-		-	-	-	-	-	-
24	4.90	95.4	95.6	97.6	<u>96.2</u>	1.2166	85.3	86.1	89.0	<u>86.8</u>	1.9468			
A5	0	0	0	0	0	0	0	A5	0	0	0	0	0	
	0.25	0.50	2.4	2.3	2.4	<u>2.4</u>	0.0577		2.4	2.3	2.4	<u>2.4</u>	0.0577	
	0.50	0.71	2.5	2.5	2.4	<u>2.5</u>	0.0577		2.5	2.5	2.4	<u>2.5</u>	0.0577	
	1	1.00	2.7	2.8	2.6	<u>2.7</u>	0.1000		2.7	2.8	2.6	<u>2.7</u>	0.1000	
	2	1.41	2.6	2.7	2.6	<u>2.6</u>	0.0577		2.6	2.7	2.6	<u>2.6</u>	0.0577	
	3	1.73	64.5	64.6	64.6	<u>64.6</u>	0.0577		64.5	64.6	64.6	<u>64.6</u>	0.0577	
	4	2.00	67.4	67.7	67.2	<u>67.4</u>	0.2517		67.4	67.7	67.2	<u>67.4</u>	0.2517	
	6	2.45	72.6	73.3	72.3	<u>72.7</u>	0.5132		72.6	73.3	72.3	<u>72.7</u>	0.5132	
	9	3.00	76.7	77.3	76.4	<u>76.8</u>	0.4582		76.7	77.3	76.4	<u>76.8</u>	0.4582	
	12	3.46	79.6	81.3	78.8	<u>79.9</u>	1.2767		79.6	81.3	78.8	<u>79.9</u>	1.2767	
	16	4.00	-	-	-	-	-		-	-	-	-	-	-
	20	4.47	-	-	-	-	-		-	-	-	-	-	-
24	4.90	87.8	88.9	86.0	<u>87.6</u>	1.4640	87.8	88.9	86.0	<u>87.6</u>	1.4640			

Table 34 Percentage amount of diclofenac sodium spray dried powders release from Formulation B1-B5

Formulation	Time	Time1/2	pH - change system					Formulation	pH - change system				
			1	2	3	mean	SD		1	2	3	mean	SD
B1	0	0	0	0	0	<u>0</u>	0	B2	0	0	0	<u>0</u>	0
	0.25	0.50	2.0	2.6	2.2	<u>2.3</u>	0.3055		3.3	3.0	3.1	<u>3.1</u>	0.1528
	0.50	0.71	2.2	2.9	2.4	<u>2.5</u>	0.3606		3.5	3.2	3.3	<u>3.3</u>	0.1528
	1	1.00	2.9	3.3	2.9	<u>3.0</u>	0.2309		3.7	3.5	3.6	<u>3.6</u>	0.1000
	2	1.41	3.1	3.2	3.0	<u>3.1</u>	0.1000		3.8	3.8	3.9	<u>3.8</u>	0.0577
	3	1.73	90.6	88.8	89.8	<u>89.8</u>	0.9074		59.5	62.5	67.6	<u>63.2</u>	4.0951
	4	2.00	97.6	97.4	97.4	<u>97.5</u>	0.1155		66.0	70.2	73.0	<u>69.7</u>	3.5232
	6	2.45	100.1	100.1	100.1	<u>100.1</u>	0		72.2	76.8	78.9	<u>76.0</u>	3.4268
	9	3.00	100.1	100.1	100.1	<u>100.1</u>	0		77.1	81.1	83.0	<u>80.4</u>	3.0116
	12	3.46	100.1	100.1	100.1	<u>100.1</u>	0		81.8	85.8	88.4	<u>85.3</u>	3.3246
	16	4.00
20	4.47	.	.	.	.	.	.	.	.	.	.	.
24	4.90	100.8	100.8	100.8	<u>100.8</u>	0	90.5	92.3	97.5	<u>93.4</u>	3.6350		
B3	0	0	0	0	0	<u>0</u>	0	B4	0	0	0	<u>0</u>	0
	0.25	0.50	3.3	2.7	2.6	<u>2.9</u>	0.3786		2.9	3.2	2.7	<u>2.9</u>	0.2517
	0.50	0.71	2.9	3.0	3.1	<u>3.0</u>	0.1000		3.0	2.7	3.0	<u>2.9</u>	0.1732
	1	1.00	3.3	3.0	3.1	<u>3.1</u>	0.1528		2.9	3.0	2.9	<u>2.9</u>	0.0577
	2	1.41	3.3	3.2	3.1	<u>3.1</u>	0.1000		2.9	3.0	3.1	<u>3.0</u>	0.1000
	3	1.73	61.6	62.7	60.8	<u>61.7</u>	0.9539		67.3	67.5	66.9	<u>67.2</u>	0.3055
	4	2.00	66.3	67.2	65.2	<u>66.2</u>	1.0017		70.7	70.6	70.5	<u>70.6</u>	0.1000
	6	2.45	70.7	71.9	69.5	<u>70.7</u>	1.2000		74.6	73.8	75.0	<u>74.5</u>	0.6110
	9	3.00	75.1	76.0	73.9	<u>75.0</u>	1.0536		78.7	77.5	79.2	<u>78.5</u>	0.8737
	12	3.46	80.0	80.4	79.1	<u>79.8</u>	0.6658		82.0	80.1	82.8	<u>81.6</u>	1.3868
	16	4.00
20	4.47	.	.	.	.	.	.	.	.	.	.	.
24	4.90	89.2	89.1	88.9	<u>89.1</u>	0.1528	88.4	87.9	91.3	<u>89.2</u>	1.8358		
B5	0	0	0	0	0	<u>0</u>	0	B5	0	0	0	<u>0</u>	0
	0.25	0.50	3.0	2.6	2.9	<u>2.8</u>	0.2082		3.0	2.6	2.9	<u>2.8</u>	0.2082
	0.50	0.71	2.7	2.9	2.6	<u>2.7</u>	0.1528		2.7	2.9	2.6	<u>2.7</u>	0.1528
	1	1.00	2.7	2.9	3.0	<u>2.9</u>	0.1528		2.7	2.9	3.0	<u>2.9</u>	0.1528
	2	1.41	3.0	2.9	3.0	<u>3.0</u>	0.0577		3.0	2.9	3.0	<u>3.0</u>	0.0577
	3	1.73	86.0	87.6	84.6	<u>86.1</u>	1.5011		86.0	87.6	84.6	<u>86.1</u>	1.5011
	4	2.00	91.9	90.3	88.8	<u>90.3</u>	1.5503		91.9	90.3	88.8	<u>90.3</u>	1.5503
	6	2.45	92.9	90.9	89.4	<u>91.1</u>	1.7559		92.9	90.9	89.4	<u>91.1</u>	1.7559
	9	3.00	94.4	92.2	90.7	<u>92.4</u>	1.8610		94.4	92.2	90.7	<u>92.4</u>	1.8610
	12	3.46	94.4	92.2	90.7	<u>92.4</u>	1.8610		94.4	92.2	90.7	<u>92.4</u>	1.8610
	16	4.00
20	4.47	.	.	.	.	.	.	.	.	.	.	.
24	4.90	94.5	92.3	90.8	<u>92.5</u>	1.8610	94.5	92.3	90.8	<u>92.5</u>	1.8610		

Table 35 Percentage amount of diclofenac sodium matrix tablets release from Formulation A1 - A5.

Formulation	Time	Time1/2	pH - change system					Formulation	pH - change system				
			1	2	3	mean	SD		1	2	3	mean	SD
A1	0	0	0	0	0	0	0	A2	0	0	0	0	0
	0.25	0.50	1.4	1.2	1.0	1.2	0.2000		0.6	0.6	0.6	0.6	0
	0.50	0.71	1.3	1.3	1.1	1.3	0.2000		0.6	0.5	0.6	0.6	0.0577
	1	1.00	2.1	2.1	1.9	2.0	0.1155		0.6	0.6	0.6	0.6	0
	2	1.41	2.9	2.8	2.4	2.7	0.2646		0.6	0.6	0.6	0.6	0
	3	1.73	54.0	49.7	44.7	49.5	4.6544		4.8	4.7	4.7	4.7	0.0577
	4	2.00	60.9	56.0	51.9	56.3	4.5059		8.4	8.6	8.4	8.5	0.1155
	6	2.45	67.9	63.8	59.2	63.6	4.3524		13.9	14.1	14.2	14.1	0.1528
	9	3.00	75.4	69.8	66.4	70.5	4.5446		20.4	20.8	21.0	20.7	0.2401
	12	3.46	78.8	73.6	71.7	74.7	3.6756		24.8	25.7	25.7	25.4	0.5196
	16	4.00	82.3	77.7	77.2	79.1	2.8116		31.0	31.8	32.2	31.7	0.5033
	20	4.47	84.6	80.2	80.2	81.7	2.5403		36.2	37.6	38.1	37.3	1.0263
24	4.90	86.2	81.8	83.0	83.7	2.2745	41.4	43.7	44.2	43.1	1.5308		
A3	0	0	0	0	0	0	0	A4	0	0	0	0	0
	0.25	0.50	0.8	0.7	1.0	0.8	0.1528		0.6	0.6	0.6	0.6	0
	0.50	0.71	0.7	0.8	0.7	0.7	0.0577		0.6	0.6	0.6	0.6	0
	1	1.00	0.7	0.7	0.6	0.7	0.0577		0.6	0.6	0.6	0.6	0
	2	1.41	0.8	0.7	0.7	0.7	0.0577		0.7	0.6	0.7	0.7	0.0577
	3	1.73	5.1	4.8	5.0	5.0	0.1528		6.3	5.8	5.6	5.9	0.3606
	4	2.00	9.2	8.5	8.9	8.9	0.3512		10.7	10.1	9.9	10.2	0.4163
	6	2.45	16.4	15.5	16.3	16.1	0.4933		17.4	16.3	16.3	16.7	0.6351
	9	3.00	24.4	22.8	24.4	23.9	0.9238		25.6	24.0	24.2	24.6	0.8718
	12	3.46	31.1	29.9	31.5	30.8	0.8327		31.9	30.0	30.5	30.8	0.9849
	16	4.00	38.5	36.8	39.0	38.1	1.1532		38.7	36.7	37.6	37.7	1.0017
	20	4.47	45.2	43.8	46.2	45.1	1.2055		45.2	42.8	43.5	43.8	1.2342
24	4.90	51.0	49.3	51.7	50.7	1.2342	50.8	47.8	51.1	49.9	1.8248		
A5	0	0	0	0	0	0	0	A5	0	0	0	0	0
	0.25	0.50	0.6	0.6	0.6	0.6	0		0.6	0.6	0.6	0.6	0
	0.50	0.71	0.7	0.6	0.6	0.6	0.0577		0.6	0.6	0.6	0.6	0
	1	1.00	0.6	0.6	0.6	0.6	0		0.6	0.6	0.6	0.6	0
	2	1.41	0.6	0.7	0.7	0.7	0.0577		0.6	0.6	0.6	0.6	0
	3	1.73	6.6	6.2	6.8	6.5	0.3055		6.6	6.2	6.8	6.5	0.3055
	4	2.00	11.9	11.2	12.4	11.8	0.6028		11.9	11.2	12.4	11.8	0.6028
	6	2.45	19.5	18.8	20.9	19.7	1.0693		19.5	18.8	20.9	19.7	1.0693
	9	3.00	29.0	27.4	30.8	29.1	1.7010		29.0	27.4	30.8	29.1	1.7010
	12	3.46	35.5	33.9	37.0	35.5	1.5503		35.5	33.9	37.0	35.5	1.5503
	16	4.00	43.4	41.4	43.7	42.8	1.2504		43.4	41.4	43.7	42.8	1.2504
	20	4.47	49.8	48.0	47.5	48.4	1.2097		49.8	48.0	47.5	48.4	1.2097
24	4.90	55.0	52.8	54.1	54.0	0.9192	55.0	52.8	54.1	54.0	0.9192		

Table 36 Percentage amount of diclofenac sodium matrix tablets release from Formulation B1 - B5.

Formulation	Time	Time1/2	pH - change system					Formulation	pH - change system				
			1	2	3	mean	SD		1	2	3	mean	SD
B1	0	0	0	0	0	<u>0</u>	0	B2	0	0	0	<u>0</u>	0
	0.25	0.50	0.8	0.9	0.8	<u>0.8</u>	0.0577		0.8	0.7	0.9	<u>0.8</u>	0.1000
	0.50	0.71	1.0	1.0	1.1	<u>1.0</u>	0.0577		0.6	0.6	0.6	<u>0.6</u>	0
	1	1.00	1.6	1.5	1.6	<u>1.6</u>	0.0577		0.6	0.6	0.6	<u>0.6</u>	0
	2	1.41	2.0	2.0	2.0	<u>2.0</u>	0		0.7	0.7	0.8	<u>0.7</u>	0.0577
	3	1.73	49.8	41.0	50.2	<u>47.0</u>	5.2000		3.7	3.4	3.7	<u>3.6</u>	0.1732
	4	2.00	55.3	47.8	56.8	<u>53.3</u>	4.8218		5.7	5.4	5.5	<u>5.5</u>	0.1528
	6	2.45	59.4	52.9	62.0	<u>58.1</u>	4.6872		8.6	8.4	8.5	<u>8.5</u>	0.1000
	9	3.00	63.2	57.1	64.4	<u>61.6</u>	3.9145		11.8	11.4	11.6	<u>11.6</u>	0.2000
	12	3.46	65.1	60.3	67.6	<u>64.3</u>	3.7099		14.7	14.4	14.5	<u>14.5</u>	0.1732
	16	4.00	68.3	63.4	70.2	<u>67.3</u>	3.5086		18.2	17.7	17.9	<u>17.9</u>	0.2646
	20	4.47	70.9	67.2	73.2	<u>70.4</u>	3.0271		22.3	22.1	22.1	<u>22.2</u>	0.1155
24	4.90	73.0	70.0	74.3	<u>72.4</u>	2.2053	25.4	25.4	25.2	<u>25.3</u>	0.1155		
B3	0	0	0	0	0	<u>0</u>	0	B4	0	0	0	<u>0</u>	0
	0.25	0.50	0.7	0.7	0.8	<u>0.7</u>	0.0577		0.7	0.6	0.7	<u>0.7</u>	0.0577
	0.50	0.71	0.6	0.6	0.6	<u>0.6</u>	0		0.7	0.6	0.7	<u>0.7</u>	0.0577
	1	1.00	0.6	0.6	0.6	<u>0.6</u>	0		0.7	0.7	0.8	<u>0.7</u>	0.0577
	2	1.41	0.7	0.7	0.7	<u>0.7</u>	0		0.7	0.9	0.8	<u>0.8</u>	0.1000
	3	1.73	4.1	4.2	4.4	<u>4.2</u>	0.1528		6.1	5.7	5.9	<u>5.9</u>	0.2000
	4	2.00	6.7	7.1	7.2	<u>7.0</u>	0.2646		10.3	9.5	10.4	<u>10.1</u>	0.4933
	6	2.45	10.4	10.8	11.2	<u>10.8</u>	0.4000		16.7	15.4	16.8	<u>16.3</u>	0.7810
	9	3.00	14.7	15.1	16.1	<u>15.3</u>	0.7211		23.3	21.7	23.4	<u>22.8</u>	0.9539
	12	3.46	18.6	19.3	20.6	<u>19.5</u>	1.0149		29.0	26.8	29.3	<u>28.4</u>	1.3650
	16	4.00	23.1	23.8	25.6	<u>24.2</u>	1.2897		35.4	33.0	36.4	<u>34.9</u>	1.7474
	20	4.47	29.2	30.2	32.5	<u>30.6</u>	1.6921		40.9	38.9	42.1	<u>40.6</u>	1.6166
24	4.90	33.0	34.0	35.9	<u>34.3</u>	1.4731	45.7	43.1	46.9	<u>45.2</u>	1.9425		
B5	0	0	0	0	0	<u>0</u>	0	B5	0	0	0	<u>0</u>	0
	0.25	0.50	0.6	0.6	0.6	<u>0.6</u>	0		0.6	0.6	0.6	<u>0.6</u>	0
	0.50	0.71	0.6	0.6	0.6	<u>0.6</u>	0		0.6	0.6	0.6	<u>0.6</u>	0
	1	1.00	0.6	0.6	0.6	<u>0.6</u>	0		0.6	0.6	0.6	<u>0.6</u>	0
	2	1.41	0.7	0.6	0.6	<u>0.6</u>	0.0577		0.7	0.6	0.6	<u>0.6</u>	0.0577
	3	1.73	6.2	6.7	5.8	<u>6.2</u>	0.4509		6.2	6.7	5.8	<u>6.2</u>	0.4509
	4	2.00	11.1	11.9	10.5	<u>11.2</u>	0.7024		11.2	11.9	10.5	<u>11.2</u>	0.7024
	6	2.45	19.4	20.1	17.9	<u>19.1</u>	1.1240		19.1	20.1	17.9	<u>19.1</u>	1.1240
	9	3.00	28.1	28.6	26.6	<u>27.8</u>	1.0408		27.8	28.6	26.6	<u>27.8</u>	1.0408
	12	3.46	36.4	36.0	34.8	<u>35.7</u>	0.8327		35.7	36.0	34.8	<u>35.7</u>	0.8327
	16	4.00	45.5	44.7	43.5	<u>44.6</u>	1.0066		44.6	44.7	43.5	<u>44.6</u>	1.0066
	20	4.47	52.7	51.4	50.5	<u>51.5</u>	1.1060		51.5	51.4	50.5	<u>51.5</u>	1.1060
24	4.90	58.5	57.1	56.5	<u>57.4</u>	1.0263	57.4	57.1	56.5	<u>57.4</u>	1.0263		

Table 37 Percentage amount of diclofenac sodium matrix tablets release from Formulation A1P2, A1P3, A1G2 and A1G3.

Formulation	Time	Time1/2	pH - change system					Formulation	pH - change system				
			1	2	3	mean	SD		1	2	3	mean	SD
A1P2	0	0	0	0	0	<u>0</u>	0	A1P3	0	0	0	<u>0</u>	0
	0.25	0.50	1.1	1.1	0.9	<u>1.0</u>	0.1155		1.0	0.9	0.9	<u>0.9</u>	0.0577
	0.50	0.71	0.9	0.8	0.8	<u>0.8</u>	0.0577		0.8	0.8	0.8	<u>0.8</u>	0
	1	1.00	1.0	1.1	1.0	<u>1.0</u>	0.0577		1.1	1.1	1.1	<u>1.1</u>	0
	2	1.41	1.2	1.4	1.4	<u>1.3</u>	0.1155		1.5	1.4	1.5	<u>1.5</u>	0.0577
	3	1.73	20.1	33.7	23.6	<u>25.8</u>	7.0619		28.2	32.6	41.0	<u>33.9</u>	6.5033
	4	2.00	26.3	40.7	29.4	<u>32.1</u>	7.5791		32.7	37.5	46.2	<u>38.8</u>	6.8432
	6	2.45	34.3	45.6	35.6	<u>38.5</u>	6.1830		38.8	42.3	49.9	<u>43.7</u>	5.6748
	9	3.00	41.5	50.4	42.5	<u>44.8</u>	4.8754		44.6	47.6	53.6	<u>48.6</u>	4.5826
	12	3.46	46.0	53.9	47.5	<u>49.1</u>	4.1956		49.7	51.2	55.6	<u>52.5</u>	3.0665
	16	4.00	50.8	58.7	53.2	<u>54.2</u>	4.0501		52.4	54.3	57.8	<u>54.8</u>	2.7392
	20	4.47	53.1	61.5	56.4	<u>57.0</u>	4.2320		56.0	57.2	60.1	<u>57.8</u>	2.1079
24	4.90	55.0	63.8	58.9	<u>59.2</u>	4.4094	58.0	59.0	61.8	<u>59.6</u>	1.9698		
A1G2	0	0	0	0	0	<u>0</u>	0	A1G3	0	0	0	<u>0</u>	0
	0.25	0.50	2.3	2.6	2.4	<u>2.4</u>	0.1528		0.6	0.6	0.8	<u>0.7</u>	0.1155
	0.50	0.71	0.9	0.9	0.9	<u>0.9</u>	0		0.5	0.5	0.6	<u>0.5</u>	0.0577
	1	1.00	0.9	0.9	0.8	<u>0.9</u>	0.0577		0.5	0.5	0.6	<u>0.5</u>	0.0577
	2	1.41	1.1	1.0	1.1	<u>1.1</u>	0.0577		0.6	0.6	0.6	<u>0.6</u>	0
	3	1.73	6.0	6.2	6.2	<u>6.1</u>	0.1155		3.5	3.6	3.4	<u>3.5</u>	0.1000
	4	2.00	9.6	9.6	9.5	<u>9.6</u>	0.0577		6.1	6.2	5.8	<u>6.0</u>	0.2082
	6	2.45	14.4	14.5	14.3	<u>14.4</u>	0.1000		9.7	10.3	9.6	<u>9.9</u>	0.3786
	9	3.00	19.8	19.6	19.5	<u>19.6</u>	0.1528		14.1	14.8	14.0	<u>14.3</u>	0.4359
	12	3.46	24.9	23.6	24.1	<u>24.2</u>	0.6557		17.6	18.5	17.6	<u>17.9</u>	0.5196
	16	4.00	28.4	28.0	28.4	<u>28.3</u>	0.2309		21.7	22.8	21.7	<u>22.1</u>	0.6351
	20	4.47	33.0	32.1	32.6	<u>32.6</u>	0.4509		24.7	25.9	25.4	<u>25.3</u>	0.6028
24	4.90	36.4	35.4	36.2	<u>36.0</u>	0.5292	28.2	29.1	28.6	<u>28.6</u>	0.4509		

Table 38 Percentage amount of diclofenac sodium matrix tablets release from Formulation A2P1 - A2P4.

Formulation	Time	Time1/2	pH - change system					Formulation	pH - change system				
			1	2	3	mean	SD		1	2	3	mean	SD
A2P1	0	0	0	0	0	0	0	A2P2	0	0	0	0	0
	0.25	0.50	0.8	0.4	0.5	<u>0.6</u>	0.2082		0.6	0.6	0.6	<u>0.6</u>	0
	0.50	0.71	0.5	0.4	0.4	<u>0.4</u>	0.0577		0.5	0.5	0.5	<u>0.5</u>	0
	1	1.00	0.5	0.5	0.4	<u>0.5</u>	0.0577		0.4	0.5	0.5	<u>0.5</u>	0
	2	1.41	0.6	0.5	0.5	<u>0.5</u>	0.0577		0.5	0.5	0.5	<u>0.5</u>	0
	3	1.73	5.7	5.4	5.9	<u>5.7</u>	0.2517		6.6	6.3	6.0	<u>6.3</u>	0.3000
	4	2.00	9.1	9.5	9.8	<u>9.5</u>	0.3512		12.0	11.6	11.1	<u>11.6</u>	0.4509
	6	2.45	15.5	17.3	17.4	<u>16.7</u>	1.0693		19.4	18.6	18.0	<u>18.7</u>	0.7024
	9	3.00	23.5	27.3	27.6	<u>26.1</u>	2.2855		28.2	26.9	26.2	<u>27.1</u>	1.0149
	12	3.46	31.0	34.3	34.6	<u>33.3</u>	1.9975		35.6	34.8	33.7	<u>34.7</u>	0.9539
	16	4.00	38.9	42.1	42.2	<u>41.1</u>	1.8770		43.7	42.6	41.6	<u>42.6</u>	1.0504
	20	4.47	44.6	48.9	48.8	<u>47.4</u>	2.4542		50.4	49.2	48.3	<u>49.3</u>	1.0536
24	4.90	50.8	55.1	54.4	<u>53.4</u>	2.3072	55.4	54.6	53.7	<u>54.6</u>	0.8505		
A2P3	0	0	0	0	0	0	0	A2P4	0	0	0	0	0
	0.25	0.50	0.5	0.5	0.5	<u>0.5</u>	0		2.0	0.7	2.1	<u>1.6</u>	0.81
	0.50	0.71	0.5	0.4	0.4	<u>0.4</u>	0.0577		0.5	0.4	0.7	<u>0.5</u>	0.1528
	1	1.00	0.5	0.5	0.5	<u>0.5</u>	0		0.6	0.5	0.8	<u>0.6</u>	0.1528
	2	1.41	0.5	0.5	0.5	<u>0.5</u>	0		0.6	0.5	0.8	<u>0.6</u>	0.1528
	3	1.73	6.4	6.1	6.0	<u>6.2</u>	0.2082		3.6	3.0	3.1	<u>3.2</u>	0.3214
	4	2.00	12.0	11.4	11.4	<u>11.6</u>	0.3464		6.0	5.4	5.7	<u>5.7</u>	0.3000
	6	2.45	20.8	19.7	19.8	<u>20.1</u>	0.6083		10.3	9.3	9.8	<u>9.8</u>	0.5000
	9	3.00	30.2	28.3	28.7	<u>29.1</u>	1.0017		15.4	13.8	14.4	<u>14.5</u>	0.8083
	12	3.46	38.4	34.7	36.2	<u>36.4</u>	1.8610		19.8	17.9	18.7	<u>18.8</u>	0.9539
	16	4.00	45.2	43.4	44.4	<u>44.3</u>	0.9018		27.2	25.3	26.2	<u>26.2</u>	0.9504
	20	4.47	51.2	50.6	50.4	<u>50.7</u>	0.4163		33.4	30.0	31.0	<u>31.5</u>	1.7474
24	4.90	57.2	56.3	57.2	<u>56.9</u>	0.5196	38.4	34.9	35.7	<u>36.3</u>	1.8339		

Table 39 Percentage amount of diclofenac sodium matrix tablets release from Formulation B2P1 - B2P4.

Formulation	Time	Time1/2	pH - change system					Formulation	pH - change system				
			1	2	3	mean	SD		1	2	3	mean	SD
B2P1	0	0	0	0	0	0	0	B2P2	0	0	0	0	0
	0.25	0.50	0.8	0.8	0.9	0.8	0.0577		0.6	0.8	0.6	0.7	0.1155
	0.50	0.71	0.6	0.6	0.6	0.6	0		0.5	0.6	0.5	0.5	0.0577
	1	1.00	0.6	0.6	0.6	0.6	0		0.5	0.5	0.4	0.5	0.0577
	2	1.41	0.7	0.7	0.7	0.7	0		0.5	0.6	0.6	0.6	0.0577
	3	1.73	4.6	5.4	4.9	5.0	0.4041		4.0	4.3	4.2	4.2	0.1528
	4	2.00	7.8	8.8	8.6	8.4	0.5292		7.0	7.8	7.6	7.5	0.4163
	6	2.45	12.9	13.8	14.0	13.6	0.5859		11.3	12.3	12.7	12.1	0.7211
	9	3.00	19.1	20.0	20.4	19.8	0.6658		16.9	18.0	18.8	17.9	0.9539
	12	3.46	24.2	25.0	25.7	25.0	0.7506		22.1	23.2	24.2	23.2	1.0504
	16	4.00	30.6	31.0	32.0	31.2	0.7211		27.2	28.7	30.0	28.6	1.4012
	20	4.47	36.1	36.5	37.6	36.7	0.7767		32.0	33.8	35.5	33.8	1.7502
24	4.90	40.4	41.1	42.6	41.4	1.1240	36.7	37.9	39.7	38.1	1.5100		
B2P3	0	0	0	0	0	0	0	B2P4	0	0	0	0	0
	0.25	0.50	0.5	0.4	0.5	0.5	0.0577		1.6	0.6	0.7	1.0	0.5508
	0.50	0.71	0.4	0.4	0.4	0.4	0		0.5	0.5	0.5	0.5	0
	1	1.00	0.5	0.5	0.4	0.5	0.0577		0.6	0.5	0.5	0.5	0.0577
	2	1.41	0.4	0.4	0.4	0.4	0		0.6	0.5	0.6	0.6	0.0577
	3	1.73	5.7	4.8	5.1	5.2	0.4582		2.6	2.8	2.9	2.8	0.1528
	4	2.00	10.6	9.0	9.2	9.6	0.8718		4.3	4.7	4.6	4.5	0.2082
	6	2.45	16.9	14.8	15.0	15.6	1.1590		7.4	7.9	7.5	7.6	0.2646
	9	3.00	25.2	22.9	22.7	23.6	1.3892		10.7	11.4	10.9	11.0	0.3606
	12	3.46	31.4	28.9	29.2	29.8	1.3650		13.7	14.5	14.0	14.1	0.4041
	16	4.00	38.2	35.8	36.7	36.9	1.2124		19.6	19.7	19.0	19.4	0.3786
	20	4.47	44.2	41.4	42.7	42.8	1.4012		23.3	23.4	23.2	23.3	0.1000
24	4.90	49.0	46.0	47.8	47.6	1.5100	26.4	26.5	26.8	26.6	0.2082		

Table 40 Percentage amount of diclofenac sodium matrix tablets release from Formulation A2G1 - A2G3 and B2G1 - B2G3.

Formulation	Time	Time1/2	pH - change system					Formulation	pH - change system				
			1	2	3	mean	SD		1	2	3	mean	SD
A2G1	0	0	0	0	0	0	0	B2G1	0	0	0	0	0
	0.25	0.50	0.5	0.5	0.5	0.5	0		1.4	1.7	1.5	1.5	0.1528
	0.50	0.71	0.5	0.5	0.5	0.5	0		0.6	0.8	0.7	0.7	0.1000
	1	1.00	0.5	0.5	0.5	0.5	0		0.6	0.7	0.8	0.7	0.1000
	2	1.41	0.6	0.5	0.5	0.5	0.0577		0.6	0.7	0.8	0.7	0.1000
	3	1.73	5.6	5.7	5.4	5.6	0.1528		3.6	3.7	3.5	3.6	0.1000
	4	2.00	9.2	9.7	9.4	9.4	0.2517		6.0	6.1	5.8	6.0	0.1528
	6	2.45	15.7	16.5	16.2	16.1	0.4014		9.6	10.2	9.3	9.7	0.4582
	9	3.00	23.5	25.0	24.7	24.4	0.7937		14.1	14.9	13.7	14.2	0.6110
	12	3.46	29.1	31.5	30.8	30.5	1.2342		17.3	18.4	16.8	17.5	0.8185
	16	4.00	35.4	38.1	37.5	37.0	1.4177		21.4	22.5	21.6	21.8	0.5859
	20	4.47	41.5	44.0	43.6	43.0	1.3429		25.4	26.5	24.6	25.5	0.9539
24	4.90	46.5	49.4	49.0	48.3	1.5716	28.6	30.1	28.5	29.1	0.8963		
A2G2	0	0	0	0	0	0	0	B2G2	0	0	0	0	0
	0.25	0.50	0.6	0.7	0.7	0.7	0.0577		0.9	0.9	0.8	0.9	0.0577
	0.50	0.71	0.5	0.6	0.5	0.5	0.0577		0.7	0.6	0.6	0.6	0.0577
	1	1.00	0.5	0.6	0.6	0.6	0.0577		0.6	0.7	0.6	0.6	0.0577
	2	1.41	0.6	0.6	0.6	0.6	0		0.7	0.7	0.7	0.7	0
	3	1.73	3.7	4.2	4.1	4.0	0.2646		4.4	4.4	3.8	4.2	0.3464
	4	2.00	6.5	7.0	6.8	6.8	0.2517		7.8	7.4	6.6	7.3	0.6110
	6	2.45	10.9	11.4	10.9	11.2	0.2887		12.9	12.6	11.5	12.3	0.7371
	9	3.00	15.6	16.2	15.4	15.7	0.4163		18.9	18.5	16.8	18.1	1.1150
	12	3.46	19.2	20.2	19.1	19.5	0.6083		24.0	23.4	21.0	22.8	1.5874
	16	4.00	23.5	24.8	23.6	24.0	0.7234		29.8	29.2	26.4	28.5	1.8148
	20	4.47	27.4	28.1	27.1	27.5	0.5132		35.2	34.1	31.0	33.4	2.1779
24	4.90	30.3	32.0	30.4	30.9	0.9539	40.8	38.7	35.2	38.2	2.8290		
A2G3	0	0	0	0	0	0	0	B2G3	0	0	0	0	0
	0.25	0.50	0.7	0.6	0.5	0.6	0.0577		1.4	1.2	1.5	1.4	0.1528
	0.50	0.71	0.5	0.6	0.5	0.5	0.0577		0.9	0.8	0.9	0.9	0.0577
	1	1.00	0.6	0.6	0.6	0.6	0		0.9	1.1	0.9	1.0	0.1155
	2	1.41	0.6	0.6	0.6	0.6	0		1.0	1.2	1.0	1.1	0.1155
	3	1.73	4.0	4.0	4.0	4.0	0		4.2	4.0	3.9	4.0	0.1528
	4	2.00	6.8	6.7	6.6	6.7	0.1000		6.5	6.2	6.1	6.3	0.2082
	6	2.45	11.5	11.5	11.2	11.4	0.1732		10.7	9.9	10.1	10.2	0.4163
	9	3.00	16.9	17.0	16.6	16.9	0.2082		15.4	14.2	14.7	14.8	0.6028
	12	3.46	21.6	21.8	21.4	21.6	0.2000		19.5	17.6	18.5	18.5	0.9504
	16	4.00	27.2	27.4	26.9	27.2	0.2517		24.4	21.5	23.1	23.0	1.4526
	20	4.47	32.1	32.5	32.2	32.3	0.2082		29.9	25.2	27.5	27.5	2.3502
24	4.90	36.6	36.9	36.4	36.6	0.2517	33.3	28.6	31.2	31.0	2.3544		

Table 41 Percentage amount of diclofenac sodium matrix tablets release from Formulation A3P1 - A3P3.

Formulation	Time	Time1/2	pH - change system					Formulation	pH - change system				
			1	2	3	mean	SD		1	2	3	mean	SD
A3P1	0	0	0	0	0	0	0	A3P2	0	0	0	0	0
	0.25	0.50	0.8	1.4	1.1	<u>1.1</u>	0.3000		0.7	1.0	0.6	<u>0.8</u>	0.1528
	0.50	0.71	0.5	0.6	0.5	<u>0.5</u>	0.0577		0.5	0.5	0.6	<u>0.5</u>	0.0577
	1	1.00	0.5	0.7	0.5	<u>0.6</u>	0.1155		0.5	0.6	0.5	<u>0.5</u>	0.0577
	2	1.41	0.5	0.6	0.5	<u>0.5</u>	0.0577		0.5	0.5	0.5	<u>0.5</u>	0
	3	1.73	6.4	6.4	6.5	<u>6.4</u>	0.0577		4.5	4.9	4.4	<u>4.6</u>	0.2646
	4	2.00	11.4	11.4	11.4	<u>11.4</u>	0		8.1	8.2	8.0	<u>8.1</u>	0.1000
	6	2.45	18.9	18.3	18.4	<u>18.5</u>	0.3214		13.7	13.8	13.5	<u>13.7</u>	0.1528
	9	3.00	29.4	29.2	29.7	<u>29.4</u>	0.2517		22.1	22.4	22.0	<u>22.2</u>	0.2082
	12	3.46	37.0	36.9	37.5	<u>37.1</u>	0.3214		29.6	30.3	29.0	<u>29.6</u>	0.6506
	16	4.00	45.2	44.9	45.6	<u>45.2</u>	0.3512		37.0	37.9	36.3	<u>37.1</u>	0.8021
	20	4.47	51.3	50.8	51.6	<u>51.2</u>	0.4041		42.4	42.9	41.9	<u>42.4</u>	0.5000
24	4.90	57.1	55.7	56.9	<u>56.6</u>	0.7572	47.3	48.2	47.0	<u>47.5</u>	0.6245		
A3P3	0	0	0	0	0	0	0						
	0.25	0.50	1.0	0.8	0.7	<u>0.8</u>	0.1528						
	0.50	0.71	0.4	0.4	0.4	<u>0.4</u>	0						
	1	1.00	0.4	0.4	0.4	<u>0.4</u>	0						
	2	1.41	0.5	0.4	0.4	<u>0.4</u>	0.0577						
	3	1.73	6.2	5.5	5.4	<u>5.7</u>	0.4359						
	4	2.00	10.5	9.7	9.6	<u>9.9</u>	0.4933						
	6	2.45	17.3	16.3	16.1	<u>16.6</u>	0.6429						
	9	3.00	26.9	25.7	25.6	<u>26.1</u>	0.7234						
	12	3.46	34.9	32.9	33.5	<u>33.8</u>	1.0263						
	16	4.00	43.2	42.3	42.3	<u>42.6</u>	0.5196						
	20	4.47	50.0	49.5	48.9	<u>49.5</u>	0.5508						
24	4.90	54.6	54.9	54.2	<u>54.6</u>	0.3511							

Table 42 Percentage amount of diclofenac sodium matrix tablets release from Formulation B3P1 - B3P3, and B3G1 - B3G3.

Formulation	Time	Time1/2	pH - change system					Formulation	pH - change system				
			1	2	3	mean	SD		1	2	3	mean	SD
B3P1	0	0	0	0	0	0	0	B3G1	0	0	0	0	0
	0.25	0.50	0.5	0.5	0.4	0.5	0.0577		0.8	0.8	0.7	0.8	0.0577
	0.50	0.71	0.5	0.5	0.4	0.5	0.0577		0.6	0.6	0.6	0.6	0
	1	1.00	0.6	0.5	0.5	0.5	0.0577		0.6	0.6	0.6	0.6	0
	2	1.41	0.6	0.5	0.5	0.5	0.0577		0.7	0.7	0.6	0.7	0.0577
	3	1.73	4.6	4.3	4.1	4.3	0.2517		5.2	4.5	4.2	4.6	0.5132
	4	2.00	8.2	7.7	7.5	7.8	0.3606		9.7	8.1	7.7	8.5	1.0583
	6	2.45	14.1	13.5	13.1	13.6	0.5033		16.0	13.6	13.0	14.2	1.5874
	9	3.00	20.9	19.8	19.5	20.1	0.7371		24.0	20.2	19.3	21.2	2.4947
	12	3.46	27.1	26.0	25.9	26.3	0.6658		30.6	25.9	24.8	27.1	3.0806
	16	4.00	33.6	31.8	31.8	32.4	1.0392		38.2	33.0	31.1	34.1	3.6756
	20	4.47	40.0	37.5	37.8	38.4	1.365		44.4	38.9	37.0	40.1	3.8432
24	4.90	45.2	42.4	43.6	43.7	1.4048	49.7	44.0	42.5	45.4	3.7987		
B3P2	0	0	0	0	0	0	0	B3G2	0	0	0	0	0
	0.25	0.50	1.3	1.2	1.5	1.3	0.1528		0.5	0.5	0.4	0.5	0.0577
	0.50	0.71	0.6	0.6	0.6	0.6	0		0.4	0.5	0.5	0.5	0.0577
	1	1.00	0.6	0.6	0.6	0.6	0		0.4	0.5	0.5	0.5	0.0577
	2	1.41	0.6	0.5	0.6	0.6	0.0577		0.5	0.5	0.5	0.5	0
	3	1.73	5.3	5.0	4.7	5.0	0.3000		3.9	3.7	3.6	3.7	0.1528
	4	2.00	9.3	8.9	8.7	9.0	0.3055		7.1	7.0	6.7	6.9	0.2082
	6	2.45	15.9	15.0	15.0	15.3	0.5196		12.6	12.6	12.0	12.4	0.3464
	9	3.00	24.8	22.7	23.0	23.5	1.1358		18.7	18.9	18.0	18.5	0.4726
	12	3.46	30.4	28.1	29.0	29.2	1.1590		24.5	24.9	23.2	24.2	0.8888
	16	4.00	37.2	34.3	35.4	35.6	1.4640		30.7	30.3	29.2	30.1	0.7767
	20	4.47	42.9	40.1	41.7	41.6	1.4048		36.9	35.7	35.2	35.9	0.8737
24	4.90	47.3	44.8	46.5	46.2	1.2767	41.7	41.2	40.2	41.0	0.7638		
B3P3	0	0	0	0	0	0	0	B3G3	0	0	0	0	0
	0.25	0.50	0.8	0.6	0.5	0.6	0.1528		0.6	0.6	0.6	0.6	0
	0.50	0.71	0.7	0.6	0.6	0.6	0.0577		0.6	0.6	0.6	0.6	0
	1	1.00	0.7	0.6	0.6	0.6	0.0577		0.6	0.6	0.6	0.6	0
	2	1.41	0.7	0.6	0.6	0.6	0.0577		0.7	0.7	1.0	0.7	0
	3	1.73	5.8	5.9	5.4	5.7	0.2646		3.9	3.8	4.0	3.9	0.0577
	4	2.00	10.0	10.3	9.4	9.9	0.4582		7.1	7.1	7.2	7.1	0.0577
	6	2.45	16.0	16.3	14.8	15.7	0.7937		11.5	11.6	11.8	11.6	0.1528
	9	3.00	22.7	23.4	21.1	22.4	1.1790		16.8	17.0	17.1	17.0	0.1528
	12	3.46	28.0	29.2	25.9	27.7	1.6703		20.9	21.0	21.3	21.1	0.2082
	16	4.00	33.6	35.3	31.8	33.6	1.7502		25.3	25.4	25.8	25.5	0.2646
	20	4.47	38.3	40.0	36.1	38.1	1.9553		28.7	28.5	29.0	28.7	0.2517
24	4.90	41.6	43.5	39.9	41.7	1.8009	31.5	31.8	32.0	31.8	0.2517		

Table 43 Percentage amount of diclofenac sodium matrix pellets release from Formulation BA1 - BA4 at different pellet sizes.

Formulation	Time	Time1/2	pH - change system						mean*	SD**
			No.14		No.18		No.20			
			1	2	1	2	1	2		
BA1	0	0	0	0	0	0	0	0	0	0
	1	1.00	2.3	2.2	2.3	2.2	2.3	2.3	<u>2.3</u>	0.0516
	2	1.41	2.4	2.3	2.5	2.4	2.6	2.6	<u>2.5</u>	0.1211
	3	1.73	30.9	28.6	34.4	33.5	34.8	31.7	<u>32.3</u>	2.3710
	4	2.00	40.0	38.9	45.7	44.5	46.1	44.5	<u>43.3</u>	3.0571
	6	2.45	53.4	52.6	59.6	58.1	60.3	58.8	<u>57.1</u>	3.2959
	9	3.00	65.1	65.1	73.0	71.1	71.6	70.0	<u>69.3</u>	3.4055
	12	3.46	72.5	71.6	78.6	76.6	78.4	76.9	<u>75.8</u>	2.9991
	24	4.90	86.7	87.2	90.0	87.7	85.3	85.4	<u>87.1</u>	1.7352
Formulation	Time	Time1/2	No.18		No.20		No.25		mean*	SD**
			1	2	1	2	1	2		
			BA2	0	0	0	0	0		
1	1.00	2.4		2.4	2.5	2.6	2.4	2.4	<u>2.5</u>	0.0837
2	1.41	2.5		2.5	2.6	2.7	2.5	2.5	<u>2.6</u>	0.0837
3	1.73	41.3		41.1	41.7	43.0	42.0	40.6	<u>41.6</u>	0.8329
4	2.00	51.6		51.7	52.5	54.4	53.8	52.0	<u>52.7</u>	1.1690
6	2.45	64.7		64.7	65.6	66.6	66.3	65.1	<u>65.5</u>	0.8124
9	3.00	74.6		74.2	75.4	75.8	75.6	74.8	<u>75.1</u>	0.6282
12	3.46	79.6		79.6	80.4	81.2	80.1	80.1	<u>80.2</u>	0.5955
24	4.90	87.6		87.6	87.8	88.3	87.8	88.0	<u>87.9</u>	0.2665
BA3	0	0	0	0	0	0	0	0	0	0
	1	1.00	2.6	2.5	2.7	2.8	2.6	2.6	<u>2.6</u>	0.1033
	2	1.41	2.8	2.8	2.9	3.1	2.9	2.9	<u>2.9</u>	0.1095
	3	1.73	41.8	44.0	45.7	44.2	42.5	46.4	<u>44.1</u>	1.7731
	4	2.00	55.4	57.6	59.2	59.0	57.7	60.8	<u>58.3</u>	1.8335
	6	2.45	68.5	70.8	72.0	72.4	71.6	73.8	<u>71.5</u>	1.7804
	9	3.00	77.8	79.0	80.3	80.1	79.7	81.9	<u>79.8</u>	1.3711
	12	3.46	86.7	84.3	86.5	86.4	86.2	87.4	<u>86.3</u>	1.0407
	24	4.90	91.9	90.8	92.9	92.3	91.8	94.0	<u>92.3</u>	1.0870
BA4	0	0	0	0	0	0	0	0	0	0
	1	1.00	2.3	2.6	2.6	2.6	2.5	2.6	<u>2.5</u>	0.1211
	2	1.41	2.6	2.7	2.8	2.8	2.6	2.7	<u>2.7</u>	0.0894
	3	1.73	41.0	42.4	45.2	45.2	45.1	46.3	<u>44.2</u>	2.0347
	4	2.00	54.3	56.1	60.0	59.3	60.9	61.9	<u>58.8</u>	2.9406
	6	2.45	67.6	69.0	72.0	71.6	73.4	74.4	<u>71.3</u>	2.5913
	9	3.00	76.5	77.5	79.7	78.8	80.6	81.4	<u>79.1</u>	1.8606
	12	3.46	84.6	86.0	86.4	85.9	87.6	87.5	<u>86.3</u>	1.1201
	24	4.90	92.6	93.5	93.7	92.7	92.8	94.4	<u>93.3</u>	0.7083

* Average and ** standard deviation from six determinations.

Table 44 Percentage amount of diclofenac sodium matrix pellets release from Formulation AAL1, BAL1 and BAL2 using the pellet size No.18.

Time	Time1/2	pH - change system											
		AAL1		mean*	SD**	BAL1		mean*	SD**	BAL2		mean*	SD**
		1	2			1	2			1	2		
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1.00	2.3	2.2	2.2	0.0707	1.8	1.8	1.8	0	2.0	2.2	2.1	0.1414
2	1.41	2.4	2.5	2.5	0.0707	2.0	2.1	2.0	0.0707	2.2	2.3	2.2	0.0707
3	1.73	55.6	54.9	55.2	0.4950	40.0	40.0	40.0	0	45.4	45.8	45.6	0.4243
4	2.00	71.1	69.4	70.2	1.2021	50.7	50.8	50.8	0.0707	60.8	61.4	61.1	0.4243
6	2.45	87.2	86.5	86.8	0.4950	67.2	66.8	67.0	0.2828	76.6	77.8	77.2	0.8485
9	3.00	95.0	94.4	94.7	0.4243	78.6	78.2	78.4	0.2828	85.6	85.8	85.7	0.1414
12	3.46	98.6	96.8	97.7	1.2728	84.6	85.5	85.1	0.6364	89.8	89.8	89.8	0
24	4.90	100.6	100.3	100.4	0.2121	93.4	93.2	93.3	0.1414	95.1	95.4	95.2	0.2121

* Average and ** standard deviation from three determinations.

Table 45 Percentage amount of diclofenac sodium matrix pellets release from Formulation BA5 at different spheronization speeds and different pellet sizes.

Formulation	Time	Time1/2	pH - change system					Formulation	pH - change system				
			1	2	3	mean*	SD**		1	2	3	mean*	SD**
BA5 (500 rpm) (No. 18)	0	0	0	0	0	0	0	BA5 (900 rpm) (No. 18)	0	0	0	0	0
	1	1.00	2.8	3.1	2.9	2.9	0.1528		2.5	2.5	2.4	2.5	0.0577
	2	1.41	3.1	3.3	3.3	3.2	0.1155		2.8	2.8	2.8	2.8	0
	3	1.73	69.0	70.9	74.8	71.6	2.9569		64.9	65.8	64.9	65.2	0.5196
	4	2.00	82.3	85.2	86.2	84.6	2.0257		91.7	83.1	81.8	82.2	5.3799
	6	2.45	89.9	91.2	92.2	91.1	1.1533		91.8	93.0	91.8	92.2	0.6928
	9	3.00	93.8	95.1	97.1	95.3	1.6623		96.5	97.2	96.7	96.8	0.3606
	12	3.46	95.8	96.6	97.8	96.7	1.0066		98.6	98.8	98.1	98.5	0.3606
24	4.90	100.5	100.9	102.0	101.1	0.7767	100.4	100.4	101.0	100.6	0.3464		
BA5 (500 rpm) (No. 20)	0	0	0	0	0	0	0	BA5 (900 rpm) (No. 20)	0	0	0	0	0
	1	1.00	2.9	2.9	2.8	2.7	0.0577		2.7	2.6	2.5	2.5	0.1000
	2	1.41	3.1	3.1	3.1	3.0	0		3.0	3.0	2.8	2.8	0.1155
	3	1.73	68.7	66.5	69.2	70.4	1.4364		70.4	67.6	66.5	65.2	2.0108
	4	2.00	83.9	82.3	84.0	88.0	0.9539		88.0	85.9	86.2	86.2	1.1358
	6	2.45	92.4	92.0	92.5	97.7	0.2646		97.7	96.6	91.8	97.2	3.1374
	9	3.00	97.4	96.3	96.5	100.5	0.5859		100.5	100.3	96.7	100.5	2.1385
	12	3.46	99.4	98.6	99.4	101.8	0.4619		101.8	100.9	98.1	102.1	1.9296
24	4.90	105.8	105.6	106.0	102.0	0.2000	102.0	101.0	101.0	102.2	0.5774		

* Average and ** standard deviation from three determinations.

Table 46 Percentage amount of diclofenac sodium matrix pellets release from Formulation AA4, AA5 at different spheronization times and different pellet sizes.

Formulation	Time	Time1/2	pH - change system					Formulation	pH - change system				
			1	2	3	mean*	SD**		1	2	3	mean*	SD**
AA4 (15 min) (No. 20)	0	0	0	0	0	0	0	AA4 (30 min) (No. 20)	0	0	0	0	0
	1	1.00	2.7	2.6	2.7	2.7	0.0577		2.6	2.8	2.7	2.7	0
	2	1.41	3.1	3.0	3.0	3.0	0.0577		2.9	3.1	3.0	3.0	0.1000
	3	1.73	47.5	45.0	43.9	45.5	1.8448		53.1	54.8	49.8	52.6	1.6653
	4	2.00	63.1	60.9	60.1	61.4	1.5535		67.4	68.2	65.0	66.9	1.6653
	6	2.45	78.6	77.0	76.3	77.3	1.1790		82.2	82.4	80.0	81.5	1.3317
	9	3.00	89.2	87.9	87.4	88.2	0.9292		90.5	89.9	88.2	89.5	1.1930
	12	3.46	92.3	92.5	91.2	92.0	0.7000		92.4	92.2	91.2	91.9	0.6429
24	4.90	96.9	97.6	96.8	97.2	0.4359	93.7	93.0	93.9	93.5	0.4726		
AA5 (15 min) (No. 20)	0	0	0	0	0	0	0	AA5 (30 min) (No. 20)	0	0	0	0	0
	1	1.00	2.7	2.7	2.6	2.7	0.0577		2.3	2.3	2.4	2.3	0.0577
	2	1.41	2.9	3.0	2.9	2.9	0.0577		2.6	2.6	2.6	2.6	0
	3	1.73	39.7	37.8	37.6	38.4	1.1590		43.4	42.8	40.0	42.1	1.8148
	4	2.00	57.0	53.9	54.8	55.2	1.5948		58.0	57.6	54.6	56.7	1.8583
	6	2.45	74.4	72.0	73.2	73.2	1.2000		75.1	74.5	72.4	74.0	1.4177
	9	3.00	86.6	85.2	86.0	85.9	0.7024		86.6	86.4	84.9	86.0	0.9292
	12	3.46	92.3	91.4	91.6	91.8	0.4726		91.0	91.4	91.4	91.3	0.2309
24	4.90	96.6	97.8	98.0	97.5	0.7572	95.0	93.5	93.7	94.1	0.8145		
AA4 (30 min) (No. 25)	0	0	0	0	0	0	0	AA5 (30 min) (No. 25)	0	0	0	0	0
	1	1.00	2.6	2.4	2.7	2.6	0.1528		2.5	2.2	2.3	2.3	0.1528
	2	1.41	2.9	2.7	2.9	2.8	0.1155		2.7	2.3	2.5	2.5	0.2000
	3	1.73	48.5	48.5	47.9	48.3	0.3464		38.3	37.6	37.8	37.9	0.3606
	4	2.00	63.4	63.8	68.5	65.2	2.8361		54.1	56.7	53.8	54.9	1.5948
	6	2.45	78.8	79.3	79.4	79.2	0.3215		71.9	71.9	71.1	71.6	0.4619
	9	3.00	88.1	88.1	87.8	88.0	0.1732		83.6	83.5	81.2	82.8	1.3577
	12	3.46	94.5	94.3	94.1	94.3	0.2000		92.3	92.7	92.1	92.4	0.3055
24	4.90	99.2	99.6	101.1	100.0	1.0017	97.8	97.7	97.9	97.8	0.1000		

* Average and ** standard deviation from three determinations.

Table 47 Values for rate, amount released and the corresponding reciprocal for the release of diclofenac sodium in reference capsules, reference tablets and commercial products (Voltaren SR).

Formulation	Mean Time	pH-change system			Formulation	pH-change system		
		dQ/dt	Q	1/Q		dQ/dt	Q	1/Q
Reference capsules	0.125	13.20	3.3	0.303	Reference tablets	2.40	0.6	1.667
	0.25	0	3.3	0.303		0	0.6	1.667
	0.75	0.20	3.4	0.324		0	0.6	1.667
	1.5	0.20	3.6	0.278		0.10	0.7	1.428
	2.5	67.70	71.3	0.014		25.30	26.0	0.038
	3.5	25.80	97.1	0.010		46.40	72.4	0.014
	5	1.65	100.4	0.010		12.50	97.4	0.010
	7.5	.	.	.		.	.	.
	10.5	.	.	.		.	.	.
	14	.	.	.		.	.	.
	18	.	.	.		.	.	.
22	.	.	.	.	.	.
Voltaren SR Tablets	0.125	5.20	1.3	0.769				
	0.25	-1.00	0.8	1.250				
	0.75	0	0.8	1.250				
	1.5	0	0.8	1.250				
	2.5	4.60	5.4	0.185				
	3.5	4.80	10.2	0.098				
	5	7.25	24.7	0.040				
	7.5	6.07	42.9	0.023				
	10.5	3.90	54.6	0.018				
	14	2.75	65.6	0.015				
	18	1.65	72.2	0.014				
22	1.70	79.0	0.013					

Table 48 Values for rate, amount released and the corresponding reciprocal for the release of diclofenac sodium spray dried powders from Formulations A1 - A5.

Formulation	Mean Time	pH-change system			Formulation	pH-change system		
		dQ/dt	Q	1/Q		dQ/dt	Q	1/Q
A1	0.125	6.80	1.7	0.588	A2	10.40	2.6	0.385
	0.25	0	1.7	0.588		-0.20	2.5	0.400
	0.75	0.40	1.9	0.526		0.80	2.9	0.345
	1.5	0.30	2.2	0.454		0.10	3.0	0.333
	2.5	16.20	18.4	0.054		70.10	73.1	0.014
	3.5	6.10	24.5	0.041		4.00	77.1	0.013
	5	3.85	32.2	0.031		1.80	80.7	0.012
	7.5	2.37	39.3	0.025		1.83	86.2	0.012
	10.5	2.23	46.0	0.022		1.27	90.0	0.011
	14	.	.	.		.	.	.
	18	.	.	.		.	.	.
	22	0.46	62.7	0.016		0.25	99.0	0.010
A3	0.125	9.20	2.3	0.435	A4	10.80	2.7	0.370
	0.25	0.40	2.5	0.400		0.20	2.8	0.357
	0.75	0.40	2.7	0.370		-0.20	2.7	0.370
	1.5	0.20	2.9	0.345		0.10	2.8	0.357
	2.5	61.30	64.2	0.016		58.30	61.1	0.016
	3.5	5.50	69.7	0.014		7.30	68.4	0.015
	5	2.70	75.1	0.013		1.80	72.0	0.014
	7.5	2.17	81.6	0.012		1.20	75.6	0.013
	10.5	1.17	85.1	0.012		1.20	79.2	0.013
	14	.	.	.		.	.	.
	18	.	.	.		.	.	.
	22	0.31	96.2	0.010		0.21	86.8	0.012
A5	0.125	9.60	2.4	0.417				
	0.25	0.20	2.5	0.400				
	0.75	0.40	2.7	0.370				
	1.5	-0.10	2.6	0.385				
	2.5	62.00	64.6	0.015				
	3.5	2.80	67.4	0.015				
	5	2.65	72.7	0.014				
	7.5	1.37	76.8	0.013				
	10.5	1.03	79.9	0.012				
	14	.	.	.				
	18	.	.	.				
	22	0.21	87.6	0.011				

Table 49 Values for rate, amount released and the corresponding reciprocal for the release of diclofenac sodium spray dried powders from Formulations B1 - B5.

Formulation	Mean Time	pH-change system			Formulation	pH-change system		
		dQ/dt	Q	1/Q		dQ/dt	Q	1/Q
B1	0.125	9.20	2.3	0.435	B2	12.40	3.1	0.322
	0.25	0.40	2.5	0.400		0.40	3.3	0.303
	0.75	1.00	3.0	0.333		0.60	3.6	0.278
	1.5	0.10	3.1	0.322		0.20	3.8	0.263
	2.5	86.70	89.8	0.011		59.40	63.2	0.016
	3.5	7.70	97.5	0.010		6.50	69.7	0.014
	5	1.30	100.1	0.010		3.15	76.0	0.013
	7.5	0.11	100.8	0.010		1.47	80.4	0.012
	10.5	.	100.8	0.010		1.63	85.3	0.012
	14	.	.	.		.	.	.
	18	.	.	.		.	.	.
22	0.04	100.8	0.010	0.23	93.4	0.011		
B3	0.125	11.60	2.9	0.345	B4	11.60	2.9	0.345
	0.25	0.20	3.0	0.333		0	2.9	0.345
	0.75	0.20	3.1	0.322		0	2.9	0.345
	1.5	0	3.1	0.322		0.10	3.0	0.333
	2.5	58.60	61.7	0.016		64.20	67.2	0.015
	3.5	4.50	66.2	0.015		3.40	70.6	0.014
	5	2.25	70.7	0.014		1.95	74.5	0.013
	7.5	1.43	75.0	0.013		1.33	78.5	0.013
	10.5	1.60	79.8	0.012		1.03	81.6	0.12
	14	.	.	.		.	.	.
	18	.	.	.		.	.	.
22	0.26	89.1	0.011	0.21	89.2	0.011		
B5	0.125	11.20	2.8	0.357	B5	11.20	2.8	0.357
	0.25	-0.20	2.7	0.370		-0.20	2.7	0.370
	0.75	0.40	2.9	0.345		0.40	2.9	0.345
	1.5	0.10	3.0	0.333		0.10	3.0	0.333
	2.5	83.10	86.1	0.012		83.10	86.1	0.012
	3.5	4.20	90.3	0.011		4.20	90.3	0.011
	5	0.40	91.1	0.011		0.40	91.1	0.011
	7.5	0.43	92.4	0.011		0.43	92.4	0.011
	10.5	.	92.4	0.011		.	92.4	0.011
	14	.	.	.		.	.	.
	18	.	.	.		.	.	.
22	0.01	92.5	0.011	0.01	92.5	0.011		

Table 50 Values for rate, amount released and the corresponding reciprocal for the release of diclofenac sodium matrix tablets from Formulations A1 - A5.

Formulation	Mean Time	pH-change system			Formulation	pH-change system		
		dQ/dt	Q	1/Q		dQ/dt	Q	1/Q
A1	0.125	4.80	1.2	0.833	A2	2.40	0.6	1.667
	0.25	0.20	1.3	0.769		0	0.6	1.667
	0.75	1.40	2.0	0.500		0	0.6	1.667
	1.5	0.70	2.7	0.370		0	0.6	1.667
	2.5	46.80	49.5	0.020		4.10	4.7	0.213
	3.5	6.80	56.3	0.018		3.80	8.5	0.118
	5	3.65	63.6	0.016		2.80	14.1	0.071
	7.5	2.30	70.5	0.014		2.20	20.7	0.048
	10.5	1.40	74.7	0.013		1.57	25.4	0.039
	14	1.10	79.1	0.013		1.58	31.7	0.032
	18	0.65	81.7	0.012		1.40	37.3	0.027
22	0.50	83.7	0.012	1.45	43.1	0.023		
A3	0.125	3.60	0.9	1.111	A4	2.40	0.6	1.667
	0.25	-0.40	0.7	1.428		0	0.6	1.667
	0.75	0	0.7	1.428		0	0.6	1.667
	1.5	0	0.7	1.428		0.10	0.7	1.428
	2.5	4.30	5.0	0.200		5.20	5.9	0.169
	3.5	3.90	8.9	0.112		4.30	10.2	0.098
	5	3.60	16.1	0.062		3.25	16.7	0.060
	7.5	2.60	23.9	0.042		2.63	24.6	0.041
	10.5	2.30	30.8	0.032		2.07	30.8	0.032
	14	1.82	38.1	0.026		1.72	37.7	0.026
	18	1.75	45.1	0.022		1.52	43.8	0.023
22	1.40	50.7	0.020	1.52	49.9	0.020		
A5	0.125	2.40	0.6	1.667				
	0.25	0	0.6	1.667				
	0.75	0	0.6	1.667				
	1.5	0.10	0.7	1.428				
	2.5	5.80	6.5	0.154				
	3.5	5.30	11.8	0.085				
	5	3.95	19.7	0.051				
	7.5	3.13	29.1	0.034				
	10.5	2.13	35.5	0.028				
	14	1.82	42.8	0.023				
	18	1.40	48.4	0.021				
	22	1.40	54.0	0.018				

Table 51 Values for rate, amount released and the corresponding reciprocal for the release of diclofenac sodium matrix tablets from Formulations B1 - B5.

Formulation	Mean Time	pH-change system			Formulation	pH-change system		
		dQ/dt	Q	1/Q		dQ/dt	Q	1/Q
B1	0.125	3.20	0.8	1.250	B2	3.20	0.8	1.250
	0.25	0.40	1.0	1.000		-0.40	0.6	1.667
	0.75	1.20	1.6	0.625		0	0.6	1.667
	1.5	0.40	2.0	0.500		0.10	0.7	1.428
	2.5	45.00	47.0	0.021		2.90	3.6	0.278
	3.5	6.30	53.3	0.019		1.90	5.5	0.182
	5	2.40	58.1	0.017		1.50	8.5	0.118
	7.5	1.75	61.6	0.016		1.03	11.6	0.086
	10.5	1.35	64.3	0.016		0.97	14.5	0.069
	14	0.75	67.3	0.015		0.85	17.9	0.056
	18	0.78	70.4	0.014		1.08	22.2	0.045
22	0.50	72.4	0.014	0.78	25.3	0.040		
B3	0.125	2.80	0.7	1.428	B4	2.80	0.7	1.428
	0.25	-0.20	0.6	1.667		0	0.7	1.428
	0.75	0	0.6	1.667		0	0.7	1.428
	1.5	0.10	0.7	1.428		0.10	0.8	1.250
	2.5	3.50	4.2	0.238		5.10	5.9	0.169
	3.5	2.80	7.0	0.143		4.20	10.1	0.099
	5	1.90	10.8	0.092		3.10	16.3	0.061
	7.5	1.50	15.3	0.065		2.17	22.8	0.044
	10.5	1.40	19.5	0.051		1.87	28.4	0.035
	14	1.18	24.2	0.041		1.62	34.9	0.029
	18	1.60	30.6	0.033		1.42	40.6	0.025
22	0.92	34.3	0.029	1.15	45.2	0.022		
B5	0.125	2.40	0.6	1.667				
	0.25	0	0.6	1.667				
	0.75	0	0.6	1.667				
	1.5	0.00	0.6	1.667				
	2.5	5.60	6.2	0.161				
	3.5	5.00	11.2	0.089				
	5	3.95	19.1	0.052				
	7.5	2.90	27.8	0.036				
	10.5	2.63	35.7	0.028				
	14	2.22	44.6	0.022				
	18	1.72	51.5	0.019				
22	1.48	57.4	0.017					

Table 52 Values for rate, amount released and the corresponding reciprocal for the release of diclofenac sodium matrix tablets from Formulations A1P2, A1P3, A1G2 and A1G3.

Formulation	Mean Time	pH-change system			Formulation	pH-change system		
		dQ/dt	Q	1/Q		dQ/dt	Q	1/Q
A1P2	0.125	4.00	1.0	1.000	A1P3	3.60	0.9	1.111
	0.25	-0.40	0.8	1.250		-0.20	0.8	1.250
	0.75	0.40	1.0	1.000		0.60	1.1	0.909
	1.5	0.30	1.3	0.769		0.40	1.5	0.667
	2.5	24.50	25.8	0.039		32.40	33.9	0.029
	3.5	6.30	32.1	0.031		5.00	38.9	0.026
	5	3.20	38.5	0.026		2.35	43.6	0.023
	7.5	2.10	44.8	0.022		1.63	48.5	0.021
	10.5	1.43	49.1	0.020		1.20	52.1	0.019
	14	1.28	54.2	0.018		0.68	54.8	0.018
	18	0.70	57.0	0.018		0.72	57.7	0.017
	22	0.55	59.2	0.017		0.45	59.5	0.017
A1G2	0.125	9.60	2.4	0.417	A1G3	2.80	0.7	1.428
	0.25	-3.00	0.9	1.111		-0.40	0.5	2.000
	0.75	0	0.9	1.111		0	0.5	2.000
	1.5	0.20	1.1	0.909		0.10	0.6	1.667
	2.5	5.00	6.1	0.164		2.90	3.5	0.286
	3.5	3.50	9.6	0.104		2.50	6.0	0.167
	5	2.40	14.4	0.069		1.95	9.9	0.101
	7.5	1.73	19.6	0.051		1.47	14.3	0.070
	10.5	1.53	24.2	0.041		1.20	17.9	0.056
	14	1.02	28.3	0.035		1.05	22.1	0.045
	18	1.08	32.6	0.031		0.80	25.3	0.040
	22	0.85	36.0	0.028		0.82	28.6	0.035

Table 54 Values for rate, amount released and the corresponding reciprocal for the release of diclofenac sodium matrix tablets from Formulations B2P1 - B2P4.

Formulation	Mean Time	pH-change system			Formulation	pH-change system		
		dQ/dt	Q	1/Q		dQ/dt	Q	1/Q
B2P1	0.125	3.20	0.8	1.250	B2P2	2.80	0.7	1.428
	0.25	-0.40	0.6	1.667		-0.40	0.5	2.000
	0.75	0	0.6	1.667		0	0.5	2.000
	1.5	0.10	0.7	1.428		0.10	0.6	1.667
	2.5	4.30	5.0	0.200		3.60	4.2	0.238
	3.5	3.40	8.4	0.119		3.30	7.5	0.133
	5	2.60	13.6	0.074		2.30	12.1	0.083
	7.5	2.07	19.8	0.050		1.93	17.9	0.056
	10.5	1.73	25.0	0.040		1.77	23.2	0.043
	14	1.55	31.2	0.032		1.35	28.6	0.035
	18	1.38	36.7	0.027		1.30	33.8	0.030
22	1.18	41.4	0.024	1.08	38.1	0.026		
B2P3	0.125	2.00	0.5	2.000	B2P4	4.00	1.0	1.000
	0.25	-0.20	0.4	2.500		-1.00	0.5	2.000
	0.75	0.20	0.5	2.000		0	0.5	2.000
	1.5	-0.10	0.4	2.500		0.10	0.6	1.667
	2.5	4.80	5.2	0.192		2.20	2.8	0.357
	3.5	4.40	9.6	0.104		1.70	4.5	0.222
	5	3.00	15.6	0.064		1.55	7.6	0.132
	7.5	2.67	23.6	0.042		1.13	11.0	0.091
	10.5	2.07	29.8	0.034		1.03	14.1	0.071
	14	1.78	36.9	0.027		1.32	19.4	0.052
	18	1.48	42.8	0.023		0.98	23.3	0.043
22	1.20	47.6	0.021	0.82	26.6	0.038		

Table 53 Values for rate, amount released and the corresponding reciprocal for the release of diclofenac sodium matrix tablets from Formulations A2P1 - A2P4.

Formulation	Mean Time	pH-change system			Formulation	pH-change system		
		dQ/dt	Q	1/Q		dQ/dt	Q	1/Q
A2P1	0.125	2.40	0.6	1.667	A2P2	2.40	0.6	1.667
	0.25	-0.40	0.4	2.500		-0.20	0.5	2.000
	0.75	0.20	0.5	2.000		0	0.5	2.000
	1.5	0	0.5	2.000		0	0.5	2.000
	2.5	5.20	5.7	0.175		5.80	6.3	0.159
	3.5	3.80	9.5	0.105		5.30	11.6	0.086
	5	3.60	16.7	0.060		3.55	18.7	0.053
	7.5	3.13	26.1	0.038		2.80	27.1	0.037
	10.5	2.40	33.3	0.030		2.53	34.7	0.029
	14	1.95	41.1	0.024		1.98	42.6	0.023
18	1.58	47.4	0.021	1.68	49.3	0.020		
22	1.50	53.4	0.019	1.32	54.6	0.018		
A2P3	0.125	2.00	0.5	2.000	A2P4	6.40	1.6	0.625
	0.25	-0.20	0.4	2.500		-2.20	0.5	2.000
	0.75	0.20	0.5	2.000		0.20	0.6	1.667
	1.5	0	0.5	2.000		0	0.6	1.667
	2.5	5.70	6.2	0.161		2.60	3.2	0.312
	3.5	5.40	11.6	0.086		2.50	5.7	0.175
	5	4.25	20.1	0.050		2.05	9.8	0.102
	7.5	3.00	29.1	0.034		1.57	14.5	0.069
	10.5	2.43	36.4	0.027		1.43	18.8	0.053
	14	1.98	44.3	0.022		1.85	26.2	0.038
18	1.60	50.7	0.020	1.32	31.5	0.032		
22	1.55	56.9	0.018	1.20	36.3	0.028		

Table 55 Values for rate, amount released and the corresponding reciprocal for the release of diclofenac sodium matrix tablets from Formulations A2G1 - A2G3 and B2G1 - B2G3.

Formulation	Mean Time	pH-change system			Formulation	pH-change system		
		dQ/dt	Q	1/Q		dQ/dt	Q	1/Q
A2G1	0.125	2.00	0.5	2.000	B2G1	6.00	1.5	0.667
	0.25	0	0.5	2.000		-1.60	0.7	1.428
	0.75	0	0.5	2.000		0	0.7	1.428
	1.5	0	0.5	2.000		0	0.7	1.428
	2.5	5.10	5.6	0.178		2.90	3.6	0.278
	3.5	3.80	9.4	0.106		2.40	6.0	0.167
	5	3.35	16.1	0.062		1.85	9.7	0.103
	7.5	2.77	24.4	0.041		1.50	14.2	0.070
	10.5	2.03	30.5	0.033		1.10	17.5	0.057
	14	1.62	37.0	0.027		1.08	21.8	0.046
	18	1.50	43.0	0.023		0.92	25.5	0.039
	22	1.32	48.3	0.021		0.90	29.1	0.034
A2G2	0.125	2.80	0.7	1.428	B2G2	3.60	0.9	1.111
	0.25	-0.40	0.5	2.000		-0.60	0.6	1.667
	0.75	0.20	0.6	1.667		0	0.6	1.667
	1.5	0	0.6	1.667		0.10	0.7	1.428
	2.5	3.40	4.0	0.250		3.50	4.2	0.238
	3.5	2.80	6.8	0.147		3.10	7.3	0.137
	5	2.20	11.2	0.089		2.50	12.3	0.081
	7.5	1.50	15.7	0.064		1.93	18.1	0.055
	10.5	1.27	19.5	0.051		1.57	22.8	0.044
	14	1.12	24.0	0.042		1.42	28.5	0.035
	18	0.88	27.5	0.036		1.22	33.4	0.030
	22	0.85	30.9	0.032		1.20	38.2	0.026
A2G3	0.125	2.40	0.6	1.667	B2G3	5.60	1.4	0.714
	0.25	-0.20	0.5	2.000		-1.00	0.9	1.111
	0.75	0.20	0.6	1.667		0.20	1.0	1.000
	1.5	0	0.6	1.667		0.10	1.1	0.909
	2.5	3.40	4.0	0.250		2.90	4.0	0.250
	3.5	2.70	6.7	0.149		2.30	6.3	0.159
	5	2.35	11.4	0.088		1.95	10.2	0.098
	7.5	1.83	16.9	0.059		1.53	14.8	0.068
	10.5	1.57	21.6	0.046		1.23	18.5	0.054
	14	1.40	27.2	0.037		1.12	23.0	0.043
	18	1.28	32.3	0.031		1.12	27.5	0.036
	22	1.08	36.6	0.027		0.88	31.0	0.032

Table 56 Values for rate, amount released and the corresponding reciprocal for the release of diclofenac sodium matrix tablets from Formulations A3P1 - A3P3.

Formulation	Mean Time	pH-change system			Formulation	pH-change system		
		dQ/dt	Q	1/Q		dQ/dt	Q	1/Q
A3P1	0.125	4.40	1.1	0.909	A3P2	3.20	0.8	1.250
	0.25	-1.20	0.5	2.000		-0.60	0.5	2.000
	0.75	0.20	0.6	1.667		0	0.5	2.000
	1.5	-0.10	0.5	2.000		0	0.5	2.000
	2.5	5.90	6.4	0.156		4.10	4.6	0.217
	3.5	5.00	11.4	0.088		3.50	8.1	0.123
	5	3.55	18.5	0.054		2.80	13.7	0.073
	7.5	3.63	29.4	0.034		2.83	22.2	0.045
	10.5	2.57	37.1	0.027		2.47	29.6	0.034
	14	2.02	45.2	0.022		1.88	37.1	0.027
	18	1.50	51.2	0.020		1.32	42.4	0.024
	22	1.35	56.6	0.018		1.28	47.5	0.021
A3P3	0.125	3.20	0.8	1.250				
	0.25	-0.80	0.4	2.500				
	0.75	0	0.4	2.500				
	1.5	0	0.4	2.500				
	2.5	5.30	5.7	0.175				
	3.5	4.20	9.9	0.101				
	5	3.35	16.6	0.060				
	7.5	3.17	26.1	0.038				
	10.5	2.57	33.8	0.030				
	14	2.20	42.6	0.023				
	18	1.72	49.5	0.020				
	22	1.28	54.6	0.018				

Table 57 Values for rate, amount released and the corresponding reciprocal for the release of diclofenac sodium matrix tablets from Formulations B3P1 - B3P3 and B3G1 - B3G3.

Formulation	Mean Time	pH-change system			Formulation	pH-change system		
		dQ/dt	Q	1/Q		dQ/dt	Q	1/Q
B3P1	0.125	2.00	0.5	2.000	B3G1	3.20	0.8	1.250
	0.25	0	0.5	2.000		-0.40	0.6	1.667
	0.75	0	0.5	2.000		0	0.6	1.667
	1.5	0	0.5	2.000		0.10	0.7	1.428
	2.5	3.80	4.3	0.232		3.90	4.6	0.217
	3.5	3.50	7.8	0.128		3.90	8.5	0.118
	5	2.90	13.6	0.074		2.85	14.2	0.070
	7.5	2.17	20.1	0.050		2.33	21.2	0.047
	10.5	2.07	26.3	0.038		1.97	27.1	0.037
	14	1.52	32.4	0.031		1.75	34.1	0.029
	18	1.50	38.4	0.026		1.50	40.1	0.025
	22	1.32	43.7	0.023		1.32	45.4	0.022
B3P2	0.125	5.20	1.3	0.769	B3G2	2.00	0.5	2.000
	0.25	-1.40	0.6	1.667		0	0.5	2.000
	0.75	0	0.6	1.667		0	0.5	2.000
	1.5	0	0.6	1.667		0	0.5	2.000
	2.5	4.40	5.0	0.200		3.20	3.7	0.270
	3.5	4.00	9.0	0.111		3.20	6.9	0.145
	5	3.15	15.3	0.065		2.75	12.4	0.081
	7.5	2.73	23.5	0.042		2.03	18.5	0.054
	10.5	1.90	29.2	0.034		1.90	24.2	0.041
	14	1.60	35.6	0.028		1.48	30.1	0.033
	18	1.50	41.6	0.024		1.45	35.9	0.028
	22	1.15	46.2	0.022		1.28	41.0	0.024
B3P3	0.125	2.40	0.6	1.667	B3G3	2.40	0.6	1.667
	0.25	0	0.6	1.667		0	0.6	1.667
	0.75	0	0.6	1.667		0	0.6	1.667
	1.5	0	0.6	1.667		0.10	0.7	1.428
	2.5	5.10	5.7	0.175		3.20	3.9	0.256
	3.5	4.20	9.9	0.101		3.20	7.1	0.141
	5	2.90	15.7	0.064		2.25	11.6	0.086
	7.5	2.23	22.4	0.045		1.80	17.0	0.059
	10.5	1.77	27.7	0.036		1.37	21.1	0.047
	14	1.48	33.6	0.030		1.10	25.5	0.039
	18	1.12	38.1	0.026		0.80	28.7	0.035
	22	0.90	41.7	0.024		0.78	31.8	0.031

Table 58 Values for rate, amount released and the corresponding reciprocal for the release of diclofenac sodium matrix pellets from Formulations BA1 - BA4, AAL1, BAL1 and BAL2.

Formulation	Mean Time	pH-change system			Formulation	pH-change system		
		dQ/dt	Q	1/Q		dQ/dt	Q	1/Q
BA1	0.5	2.30	2.3	0.435	BA2	2.50	2.5	0.400
	1.5	0.20	2.5	0.400		0.10	2.6	0.385
	2.5	29.80	32.3	0.031		39.00	41.6	0.024
	3.5	11.00	43.3	0.023		11.10	52.7	0.019
	5	6.90	57.1	0.018		6.40	65.5	0.015
	7.5	4.07	69.3	0.014		3.20	75.1	0.013
	10.5	2.17	75.8	0.013		1.70	80.2	0.012
	22	0.94	87.1	0.011		0.64	87.9	0.011
BA3	0.5	2.60	2.6	0.385	BA4	2.50	2.5	0.400
	1.5	0.30	2.9	0.345		0.20	2.7	0.370
	2.5	41.20	44.1	0.023		41.50	44.2	0.023
	3.5	14.20	58.3	0.017		14.60	58.8	0.017
	5	6.60	71.5	0.014		6.25	71.3	0.014
	7.5	2.77	79.8	0.012		2.60	79.1	0.013
	10.5	2.17	86.3	0.012		2.40	86.3	0.012
	22	0.50	92.3	0.011		0.58	93.3	0.011
AAL1	0.5	2.20	2.2	0.454	BAL1	1.80	1.8	0.555
	1.5	0.30	2.5	0.400		0.02	2.0	0.500
	2.5	52.70	55.2	0.018		38.00	40.0	0.025
	3.5	15.00	70.2	0.014		10.80	50.8	0.020
	5	8.30	86.8	0.012		8.90	67.0	0.015
	7.5	2.63	94.7	0.010		3.80	78.4	0.013
	10.5	1.00	97.7	0.010		2.23	85.1	0.012
	22	0.22	100.4	0.010		0.68	93.3	0.011
BAL2	0.5	2.10	2.1	0.476				
	1.5	0.10	2.2	0.454				
	2.5	43.40	45.6	0.022				
	3.5	15.50	61.1	0.016				
	5	8.05	77.2	0.013				
	7.5	2.83	85.7	0.012				
	10.5	1.37	89.8	0.011				
	22	0.45	95.2	0.010				

Table 59 Values for rate, amount released and the corresponding reciprocal for the release of diclofenac sodium matrix pellets from Formulations AA4, AA5 and BA5.

Formulation	Mean Time	pH-change system			Formulation	pH-change system		
		dQ/dt	Q	1/Q		dQ/dt	Q	1/Q
AA4 (15 min) (No. 20)	0.5	2.70	2.7	0.370	AA4 (30 min) (No. 20)	2.70	2.7	0.370
	1.5	0.30	3.0	0.333		0.30	3.0	0.333
	2.5	42.50	45.5	0.022		49.60	52.6	0.019
	3.5	15.90	61.4	0.016		14.30	66.9	0.015
	5	7.95	77.3	0.013		7.30	81.5	0.012
	7.5	3.63	88.2	0.011		2.67	89.5	0.011
	10.5	1.27	92.0	0.011		0.80	91.9	0.011
	22	0.43	97.2	0.010		1.33	93.5	0.011
AA5 (15 min) (No. 20)	0.5	2.70	2.7	0.370	AA5 (30 min) (No. 20)	2.30	2.3	0.435
	1.5	0.20	2.9	0.345		0.30	2.6	0.385
	2.5	35.50	38.4	0.026		39.50	42.1	0.024
	3.5	16.80	55.2	0.018		14.60	56.7	0.018
	5	9.00	73.2	0.014		8.65	74.0	0.014
	7.5	4.26	85.9	0.012		4.00	86.0	0.012
	10.5	1.97	91.8	0.011		1.77	91.3	0.011
	22	0.48	97.5	0.010		0.23	94.1	0.011
AA4 (30 min) (No. 25)	0.5	2.60	2.6	0.385	AA4 (30 min) (No. 25)	2.30	2.3	0.435
	1.5	0.20	2.8	0.357		0.20	2.5	0.400
	2.5	45.50	48.3	0.021		35.40	37.9	0.026
	3.5	16.90	65.2	0.015		17.00	54.9	0.018
	5	7.00	79.2	0.013		8.35	71.6	0.014
	7.5	2.93	88.0	0.011		3.73	82.8	0.012
	10.5	2.10	94.3	0.011		3.20	92.4	0.011
	22	0.22	100.0	0.010		0.45	97.8	0.010
BA5 (500 rpm) (No. 18)	0.5	2.90	2.9	0.345	BA5 (900 rpm) (No. 18)	2.50	2.5	0.400
	1.5	0.30	3.2	0.312		0.30	2.8	0.357
	2.5	6.40	71.6	0.014		64.40	65.2	0.015
	3.5	13.00	84.6	0.012		17.00	82.2	0.012
	5	3.25	91.1	0.011		5.00	92.2	0.011
	7.5	1.40	95.3	0.010		1.53	96.8	0.010
	10.5	0.47	96.7	0.010		0.57	98.5	0.010
	22	0.37	101.1	0.010		0.18	100.6	0.010
BA5 (500 rpm) (No. 20)	0.5	2.70	2.7	0.370	BA5 (900 rpm) (No. 20)	5.00	2.5	0.400
	1.5	0.30	3.0	0.333		0.30	2.8	0.357
	2.5	67.40	70.4	0.014		62.40	65.2	0.015
	3.5	17.60	88.0	0.011		21.00	86.2	0.012
	5	4.85	97.7	0.010		5.50	97.2	0.010
	7.5	0.93	100.5	0.010		1.10	100.5	0.010
	10.5	0.43	101.8	0.010		0.53	102.1	0.010
	22	0.02	102.0	0.010		0.01	102.2	0.010

VITA

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