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## **APPENDIX**

Table 33. Dissolution of Diclofenac Sodium from Diclofenac Sodium Powder in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |       |        |        | • Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|-------|--------|--------|--------------------------|-------------|
|                   | 1           | 2     | 3     | 4     | 5      | 6      |                          |             |
| 5                 | 1.99        | 7.63  | 5.55  | 6.18  | 4.55   | 4.06   | 4.99                     | 1.94        |
| 10                | 5.83        | 7.23  | 5.69  | 5.49  | 4.34   | 3.59   | 5.36                     | 1.27        |
| 20                | 4.31        | 6.86  | 5.18  | 5.63  | 4.34   | 4.47   | 5.13                     | 1.00        |
| 30                | 4.99        | 6.64  | 5.03  | 5.81  | 4.26   | 3.18   | 4.99                     | 1.20        |
| 60                | 4.23        | 5.40  | 5.03  | 5.12  | 4.19   | 3.15   | 4.52                     | 0.83        |
| 90                | 4.12        | 4.85  | 4.63  | 4.25  | 3.28   | 3.00   | 4.02                     | 0.74        |
| 120               | 3.87        | 5.00  | 3.74  | 4.32  | 3.31   | 2.89   | 3.86                     | 0.74        |
| 125               | 27.55       | 25.56 | 34.37 | 32.51 | 23.95  | 41.91  | 30.64                    | 6.94        |
| 130               | 36.08       | 36.07 | 50.93 | 44.99 | 33.73  | 54.05  | 42.64                    | 8.60        |
| 140               | 51.58       | 53.97 | 65.49 | 62.84 | 47.56  | 68.08  | 58.25                    | 8.33        |
| 150               | 71.82       | 67.28 | 74.22 | 78.11 | 57.50  | 76.91  | 70.97                    | 7.65        |
| 180               | 88.43       | 93.31 | 89.79 | 93.90 | 81.73  | 96.27  | 90.57                    | 5.18        |
| 240               | 94.90       | 95.23 | 96.72 | 95.60 | 100.76 | 101.33 | 97.42                    | 2.88        |
| 300               | 96.08       | 95.62 | 97.29 | 95.70 | 102.11 | 102.36 | 98.19                    | 3.19        |
| 360               | 96.50       | 95.75 | 96.42 | 95.70 | 102.37 | 102.06 | 98.13                    | 3.18        |
| 420               | 97.09       | 96.77 | 96.69 | 96.29 | 102.41 | 101.03 | 98.38                    | 2.64        |
| 480               | 97.38       | 95.59 | 96.56 | 97.44 | 102.18 | 102.92 | 98.68                    | 3.08        |
| 540               | 96.99       | 96.12 | 96.95 | 96.39 | 103.26 | 102.88 | 98.77                    | 3.35        |
| 600               | 97.45       | 96.51 | 97.19 | 97.18 | 102.77 | 103.12 | 99.04                    | 3.05        |
| 660               | 97.58       | 96.91 | 97.35 | 97.57 | 102.41 | 102.42 | 99.04                    | 2.63        |
| 720               | 97.84       | 97.40 | 97.82 | 97.93 | 103.49 | 103.58 | 99.68                    | 2.99        |

Table 34. Dissolution of Diclofenac Sodium from 10:3 Diclofenac Sodium:HPMC Solid Dispersion in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |        |        |        |        |        | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|--------|--------|--------|--------|--------|------------------------|-------------|
|                   | 1           | 2      | 3      | 4      | 5      | 6      |                        |             |
| 5                 | 1.02        | 1.41   | 1.49   | 1.83   | 0.47   | 0.10   | 1.05                   | 0.66        |
| 10                | 0.25        | 0.36   | 0.10   | 0.21   | 0.58   | 0.07   | 0.26                   | 0.19        |
| 20                | 0.36        | 1.12   | 0.39   | 0.62   | 0.54   | 0.33   | 0.56                   | 0.30        |
| 30                | 0.43        | 1.27   | 0.72   | 0.43   | 0.69   | 0.55   | 0.68                   | 0.31        |
| 60                | 0.69        | 1.05   | 0.90   | 0.62   | 1.02   | 0.99   | 0.88                   | 0.18        |
| 90                | 0.83        | 1.27   | 1.09   | 0.80   | 1.21   | 1.11   | 1.05                   | 0.19        |
| 120               | 0.98        | 1.16   | 1.12   | 0.95   | 1.28   | 1.29   | 1.13                   | 0.14        |
| 125               | 16.27       | 7.81   | 13.34  | 9.47   | 11.38  | 10.90  | 11.53                  | 2.97        |
| 130               | 25.56       | 14.51  | 24.98  | 16.76  | 18.48  | 19.88  | 20.03                  | 4.44        |
| 140               | 37.58       | 22.89  | 35.54  | 26.98  | 29.64  | 33.14  | 30.96                  | 5.52        |
| 150               | 45.77       | 29.43  | 41.39  | 35.00  | 37.75  | 41.27  | 38.44                  | 5.73        |
| 180               | 59.39       | 42.94  | 52.90  | 51.21  | 50.93  | 55.64  | 52.17                  | 5.52        |
| 240               | 74.58       | 59.87  | 67.21  | 67.67  | 65.11  | 71.18  | 67.60                  | 5.05        |
| 300               | 81.82       | 71.83  | 76.42  | 77.08  | 78.84  | 79.72  | 76.95                  | 3.53        |
| 360               | 89.55       | 81.16  | 83.49  | 85.11  | 83.84  | 89.20  | 85.39                  | 3.34        |
| 420               | 93.58       | 87.60  | 91.81  | 89.89  | 90.05  | 91.61  | 90.76                  | 2.05        |
| 480               | 95.36       | 92.24  | 96.12  | 93.67  | 91.61  | 95.12  | 94.02                  | 1.82        |
| 540               | 97.87       | 95.79  | 99.31  | 96.88  | 97.19  | 97.20  | 97.37                  | 1.17        |
| 600               | 99.06       | 98.42  | 100.50 | 98.90  | 98.39  | 99.54  | 99.14                  | 0.79        |
| 660               | 98.96       | 100.22 | 101.25 | 100.89 | 100.32 | 101.49 | 100.52                 | 0.91        |
| 720               | 97.78       | 99.17  | 99.94  | 100.96 | 101.38 | 100.21 | 99.51                  | 1.30        |

Table 35. Dissolution of Diclofenac Sodium from 10:3 Diclofenac Sodium: Carbomer Solid Dispersion in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |       |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|-------|-------|-------|------------------------|-------------|
|                   | 1           | 2     | 3     | 4     | 5     | 6     |                        |             |
| 5                 | 0           | 0     | 0.10  | 0.35  | 0.06  | 0.52  | 0.17                   | 0.21        |
| 10                | 0           | 0     | 0     | 0     | 0     | 0     | 0                      | 0           |
| 20                | 0           | 0     | 0     | 0     | 0     | 0     | 0                      | 0           |
| 30                | 0           | 0     | 0     | 0     | 0     | 0.10  | 0.02                   | 0.04        |
| 60                | 0.07        | 0.51  | 0.59  | 0.54  | 0.36  | 0.87  | 0.49                   | 0.26        |
| 90                | 0.47        | 0.80  | 0.88  | 0.87  | 0.76  | 1.23  | 0.84                   | 0.24        |
| 120               | 0.77        | 1.13  | 1.22  | 1.19  | 1.12  | 1.45  | 1.15                   | 0.22        |
| 125               | 20.04       | 18.19 | 20.97 | 25.61 | 22.68 | 28.45 | 22.66                  | 3.79        |
| 130               | 32.65       | 27.84 | 33.15 | 39.23 | 33.43 | 39.55 | 34.31                  | 4.44        |
| 140               | 48.61       | 42.33 | 49.98 | 57.58 | 49.75 | 55.92 | 50.70                  | 5.49        |
| 150               | 60.52       | 52.91 | 60.75 | 71.39 | 60.44 | 65.72 | 61.96                  | 6.18        |
| 180               | 74.02       | 67.90 | 73.87 | 78.45 | 72.51 | 76.79 | 73.92                  | 3.66        |
| 240               | 78.98       | 77.71 | 79.06 | 79.70 | 79.09 | 79.03 | 79.93                  | 0.65        |
| 300               | 78.98       | 79.24 | 79.83 | 79.89 | 80.20 | 79.09 | 79.54                  | 0.50        |
| 360               | 79.31       | 79.57 | 80.23 | 80.02 | 80.53 | 79.42 | 79.85                  | 0.49        |
| 420               | 80.08       | 80.40 | 80.66 | 80.32 | 80.86 | 79.55 | 80.31                  | 0.46        |
| 480               | 79.11       | 79.54 | 79.89 | 79.43 | 79.97 | 78.70 | 79.44                  | 0.48        |
| 540               | 79.28       | 79.70 | 80.13 | 79.63 | 80.33 | 78.89 | 79.66                  | 0.53        |
| 600               | 79.51       | 79.80 | 80.33 | 79.76 | 80.53 | 79.16 | 79.85                  | 0.51        |
| 660               | 79.61       | 80.00 | 80.40 | 79.83 | 80.66 | 79.09 | 79.93                  | 0.56        |
| 720               | 79.98       | 80.02 | 80.60 | 79.99 | 80.73 | 79.52 | 80.14                  | 0.47        |

Table 36. Dissolution of Diclofenac Sodium from 10:3 Diclofenac Sodium: Chitosan Solid Dispersion in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |       |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|-------|-------|-------|------------------------|-------------|
|                   | 1           | 2     | 3     | 4     | 5     | 6     |                        |             |
| 5                 | 0           | 0     | 1.47  | 0.25  | 0.49  | 0.21  | 0.40                   | 0.55        |
| 10                | 0           | 0     | 1.65  | 0.30  | 0.45  | 0.25  | 0.44                   | 0.62        |
| 20                | 0.68        | 0.39  | 2.25  | 0.64  | 1.09  | 0.54  | 0.93                   | 0.69        |
| 30                | 1.15        | 0.76  | 2.17  | 1.17  | 1.18  | 0.91  | 1.22                   | 0.49        |
| 60                | 1.48        | 1.20  | 2.06  | 1.34  | 1.46  | 1.13  | 1.45                   | 0.33        |
| 90                | 1.48        | 1.42  | 1.99  | 1.38  | 1.64  | 1.17  | 1.51                   | 0.28        |
| 120               | 1.44        | 1.49  | 1.95  | 1.60  | 1.82  | 1.35  | 1.61                   | 0.23        |
| 125               | 29.99       | 26.25 | 28.79 | 25.04 | 27.66 | 21.17 | 26.48                  | 3.14        |
| 130               | 28.00       | 27.01 | 31.63 | 28.66 | 29.77 | 24.19 | 28.21                  | 2.53        |
| 140               | 26.39       | 27.24 | 32.73 | 30.54 | 30.93 | 25.78 | 28.94                  | 2.84        |
| 150               | 26.49       | 27.34 | 32.26 | 31.37 | 30.97 | 26.47 | 29.15                  | 2.66        |
| 180               | 26.36       | 27.47 | 32.83 | 31.92 | 32.23 | 26.94 | 29.63                  | 2.99        |
| 240               | 26.62       | 27.34 | 33.89 | 31.92 | 31.93 | 26.94 | 29.77                  | 3.17        |
| 300               | 26.79       | 27.47 | 33.36 | 31.45 | 31.84 | 26.54 | 29.58                  | 2.98        |
| 360               | 26.66       | 27.43 | 33.03 | 32.03 | 33.04 | 27.04 | 29.87                  | 3.13        |
| 420               | 26.59       | 27.43 | 32.96 | 31.72 | 32.05 | 26.77 | 29.59                  | 2.95        |
| 480               | 26.66       | 27.53 | 32.89 | 31.88 | 32.55 | 26.90 | 29.74                  | 2.99        |
| 540               | 26.52       | 27.57 | 32.73 | 31.72 | 31.76 | 26.77 | 29.51                  | 2.85        |
| 600               | 26.20       | 27.73 | 32.93 | 31.80 | 31.88 | 26.84 | 29.56                  | 2.96        |
| 660               | 26.46       | 27.73 | 32.76 | 31.64 | 32.21 | 26.71 | 29.59                  | 2.92        |
| 720               | 26.23       | 26.70 | 32.83 | 31.68 | 31.97 | 26.74 | 29.53                  | 2.95        |

Table 37. Dissolution of Diclofenac Sodium from 3:1 Diclofenac Sodium: EC Solid Dispersion in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |        |       |       |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|--------|-------|-------|-------|-------|------------------------|-------------|
|                   | 1           | 2      | 3     | 4     | 5     | 6     |                        |             |
| 5                 | 0           | 0.88   | 0.49  | 0.47  | 0.77  | 0.10  | 0.45                   | 0.35        |
| 10                | 0.98        | 1.40   | 0.50  | 2.10  | 1.47  | 1.29  | 1.29                   | 0.53        |
| 20                | 4.79        | 5.40   | 3.64  | 5.17  | 4.50  | 3.88  | 4.56                   | 0.70        |
| 30                | 5.48        | 4.88   | 3.71  | 6.50  | 3.95  | 4.14  | 4.78                   | 1.07        |
| 60                | 5.52        | 5.29   | 3.85  | 6.32  | 3.91  | 4.18  | 4.85                   | 1.01        |
| 90                | 5.59        | 4.66   | 4.33  | 8.05  | 4.06  | 4.55  | 5.21                   | 1.49        |
| 120               | 5.70        | 5.14   | 4.04  | 5.91  | 5.13  | 4.48  | 5.07                   | 0.71        |
| 125               | 4.21        | 6.77   | 4.22  | 7.22  | 3.62  | 4.53  | 5.10                   | 1.51        |
| 130               | 5.76        | 10.12  | 7.87  | 10.76 | 5.88  | 7.44  | 7.97                   | 2.10        |
| 140               | 10.71       | 18.31  | 14.58 | 17.13 | 11.69 | 12.29 | 14.12                  | 3.09        |
| 150               | 16.09       | 24.33  | 19.61 | 22.07 | 15.45 | 16.20 | 18.96                  | 3.66        |
| 180               | 29.50       | 38.87  | 32.65 | 34.48 | 25.99 | 26.40 | 31.32                  | 4.99        |
| 240               | 44.78       | 57.33  | 50.70 | 50.33 | 41.12 | 41.48 | 47.62                  | 6.31        |
| 300               | 59.18       | 72.98  | 67.13 | 65.87 | 58.96 | 56.23 | 63.39                  | 6.34        |
| 360               | 68.49       | 79.83  | 74.95 | 73.41 | 68.36 | 64.65 | 71.62                  | 5.49        |
| 420               | 75.45       | 87.72  | 84.74 | 78.92 | 75.66 | 71.44 | 78.99                  | 6.16        |
| 480               | 80.50       | 96.12  | 90.36 | 85.99 | 81.29 | 77.63 | 85.32                  | 6.94        |
| 540               | 87.96       | 98.06  | 94.51 | 90.33 | 85.73 | 85.45 | 90.34                  | 5.06        |
| 600               | 91.73       | 100.06 | 97.99 | 93.06 | 89.16 | 87.82 | 93.30                  | 4.85        |
| 660               | 92.75       | 97.29  | 95.23 | 95.20 | 93.93 | 94.41 | 94.80                  | 1.53        |
| 720               | 96.18       | 97.76  | 96.35 | 95.40 | 96.29 | 97.62 | 96.60                  | 0.91        |

Table 38. Dissolution of Diclofenac Sodium from 10:3 Diclofenac Sodium: Eudragit Solid Dispersion in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |       |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|-------|-------|-------|------------------------|-------------|
|                   | 1           | 2     | 3     | 4     | 5     | 6     |                        |             |
| 5                 | 1.61        | 5.53  | 4.26  | 2.91  | 2.46  | 3.62  | 3.40                   | 1.39        |
| 10                | 1.83        | 3.51  | 4.82  | 3.06  | 2.17  | 3.58  | 3.16                   | 1.08        |
| 20                | 1.83        | 3.95  | 4.52  | 3.02  | 2.17  | 3.80  | 3.22                   | 1.06        |
| 30                | 1.61        | 3.95  | 4.49  | 3.17  | 2.43  | 3.77  | 3.24                   | 1.06        |
| 60                | 2.17        | 3.99  | 4.78  | 3.13  | 2.46  | 5.01  | 3.59                   | 1.19        |
| 90                | 1.94        | 4.10  | 4.56  | 3.32  | 2.61  | 3.99  | 3.42                   | 0.99        |
| 120               | 1.98        | 4.02  | 4.34  | 3.06  | 2.65  | 3.73  | 3.30                   | 0.90        |
| 125               | 5.73        | 8.45  | 14.96 | 8.75  | 6.50  | 10.23 | 9.10                   | 3.29        |
| 130               | 8.56        | 9.97  | 19.86 | 11.18 | 8.77  | 12.78 | 11.85                  | 4.23        |
| 140               | 13.25       | 13.31 | 27.60 | 15.94 | 12.72 | 16.75 | 16.60                  | 5.63        |
| 150               | 17.73       | 16.52 | 33.63 | 20.37 | 15.08 | 20.78 | 20.69                  | 6.71        |
| 180               | 29.13       | 24.52 | 45.50 | 29.40 | 22.60 | 33.44 | 30.77                  | 8.18        |
| 240               | 43.39       | 35.20 | 59.00 | 42.12 | 40.70 | 43.20 | 43.94                  | 7.97        |
| 300               | 54.16       | 43.40 | 66.27 | 51.18 | 53.83 | 49.91 | 53.13                  | 7.52        |
| 360               | 61.24       | 51.76 | 71.20 | 59.38 | 67.67 | 57.02 | 61.38                  | 7.09        |
| 420               | 66.52       | 56.42 | 73.81 | 64.04 | 74.02 | 60.52 | 65.89                  | 7.09        |
| 480               | 70.35       | 60.92 | 76.83 | 68.51 | 78.48 | 64.13 | 69.87                  | 6.89        |
| 540               | 73.74       | 65.78 | 78.44 | 71.74 | 84.04 | 71.76 | 74.25                  | 6.29        |
| 600               | 75.06       | 68.99 | 82.63 | 74.90 | 86.30 | 74.71 | 77.27                  | 6.20        |
| 660               | 80.39       | 72.79 | 83.23 | 77.70 | 89.26 | 77.35 | 80.12                  | 5.67        |
| 720               | 83.11       | 75.00 | 82.76 | 76.90 | 90.55 | 78.94 | 81.66                  | 5.26        |

Table 39. Dissolution of Diclofenac Sodium from 10:1 Diclofenac Sodium: EC Solid Dispersion in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |       |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|-------|-------|-------|------------------------|-------------|
|                   | 1           | 2     | 3     | 4     | 5     | 6     |                        |             |
| 30                | 0.25        | 0     | 0     | 0     | 0.10  | 0     | 0.06                   | 0.10        |
| 60                | 0.25        | 0     | 0.18  | 1.09  | 0.39  | 0     | 0.32                   | 0.41        |
| 90                | 0.94        | 0.14  | 0.66  | 0.44  | 0.39  | 0.25  | 0.47                   | 0.29        |
| 120               | 1.96        | 1.95  | 1.93  | 0.51  | 1.05  | 0.43  | 1.31                   | 0.73        |
| 125               | 18.51       | 16.84 | 20.17 | 26.19 | 16.55 | 22.08 | 20.06                  | 3.65        |
| 130               | 25.72       | 24.21 | 29.31 | 35.49 | 23.02 | 30.08 | 27.97                  | 4.62        |
| 140               | 34.61       | 32.59 | 39.15 | 46.39 | 31.24 | 38.91 | 37.15                  | 5.56        |
| 150               | 41.00       | 38.91 | 46.66 | 53.59 | 36.98 | 46.20 | 43.89                  | 6.13        |
| 180               | 52.35       | 51.15 | 59.47 | 65.09 | 48.27 | 58.45 | 55.80                  | 6.28        |
| 240               | 66.64       | 63.49 | 71.47 | 74.82 | 61.21 | 70.66 | 68.05                  | 5.18        |
| 300               | 73.68       | 70.01 | 78.01 | 79.82 | 68.83 | 77.32 | 74.61                  | 4.51        |
| 360               | 77.63       | 77.60 | 83.54 | 84.69 | 72.56 | 83.29 | 79.89                  | 4.73        |
| 420               | 83.29       | 83.04 | 88.19 | 87.09 | 78.93 | 88.25 | 84.80                  | 3.70        |
| 480               | 86.12       | 86.25 | 91.26 | 88.86 | 82.56 | 87.63 | 87.11                  | 2.93        |
| 540               | 88.65       | 89.62 | 94.80 | 91.82 | 85.99 | 92.98 | 90.64                  | 3.19        |
| 600               | 90.33       | 91.29 | 95.54 | 92.92 | 87.94 | 94.68 | 92.12                  | 2.84        |
| 660               | 90.72       | 92.79 | 97.26 | 93.79 | 89.29 | 96.19 | 93.34                  | 3.07        |
| 720               | 91.75       | 94.36 | 98.40 | 94.42 | 87.38 | 97.61 | 93.99                  | 4.04        |

Table 40. Dissolution of Diclofenac Sodium from 10:0.1 Diclofenac Sodium: Chitosan Solid Dispersion in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |        |        |        |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|--------|--------|--------|-------|-------|------------------------|-------------|
|                   | 1           | 2      | 3      | 4      | 5     | 6     |                        |             |
| 30                | 1.57        | 1.68   | 2.48   | 1.94   | 2.09  | 1.79  | 1.93                   | 0.33        |
| 60                | 1.27        | 1.49   | 1.49   | 1.46   | 1.54  | 1.60  | 1.48                   | 0.11        |
| 90                | 1.53        | 1.49   | 2.59   | 2.16   | 1.72  | 2.01  | 1.92                   | 0.42        |
| 120               | 2.08        | 1.79   | 2.96   | 3.26   | 1.94  | 3.14  | 2.53                   | 0.66        |
| 125               | 22.59       | 20.03  | 24.20  | 26.39  | 26.33 | 19.60 | 23.19                  | 2.98        |
| 130               | 26.59       | 22.43  | 27.99  | 31.88  | 32.90 | 22.08 | 27.31                  | 4.57        |
| 140               | 33.87       | 28.38  | 37.10  | 42.01  | 43.07 | 28.91 | 35.56                  | 6.31        |
| 150               | 40.08       | 33.80  | 46.48  | 49.45  | 50.91 | 34.49 | 42.54                  | 7.49        |
| 180               | 55.22       | 47.90  | 62.20  | 65.17  | 64.76 | 47.21 | 57.08                  | 8.20        |
| 240               | 72.90       | 69.60  | 76.96  | 81.58  | 80.17 | 65.47 | 74.45                  | 6.27        |
| 300               | 82.49       | 78.81  | 84.39  | 89.02  | 87.45 | 76.53 | 83.12                  | 4.85        |
| 360               | 92.80       | 88.72  | 93.90  | 97.33  | 94.19 | 85.91 | 92.14                  | 4.13        |
| 420               | 96.17       | 92.88  | 96.28  | 98.72  | 95.85 | 91.75 | 95.28                  | 2.54        |
| 480               | 102.26      | 94.89  | 99.12  | 101.20 | 97.52 | 96.05 | 98.51                  | 2.89        |
| 540               | 99.78       | 96.31  | 99.02  | 100.90 | 99.31 | 96.84 | 98.69                  | 1.77        |
| 600               | 100.34      | 98.23  | 100.44 | 102.72 | 99.87 | 98.03 | 99.94                  | 1.72        |
| 660               | 100.17      | 99.18  | 99.94  | 100.84 | 99.97 | 99.22 | 99.89                  | 0.62        |
| 720               | 101.46      | 101.46 | 100.67 | 101.27 | 99.77 | 99.91 | 100.76                 | 0.77        |

Table 41. Dissolution of Diclofenac Sodium from 10:(0.95+0.05) Diclofenac Sodium:(EC+chitosan) Solid Dispersion in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |        |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|--------|-------|-------|------------------------|-------------|
|                   | 1           | 2     | 3     | 4      | 5     | 6     |                        |             |
| 30                | 0.07        | 0     | 0     | 0.25   | 0     | 0.43  | 0.13                   | 0.18        |
| 60                | 0.10        | 0     | 0.10  | 0.10   | 0     | 0.43  | 0.12                   | 0.16        |
| 90                | 0.18        | 0.03  | 0.72  | 1.08   | 0     | 1.02  | 0.51                   | 0.51        |
| 120               | 0.65        | 0.29  | 0.43  | 1.08   | 0.10  | 1.24  | 0.63                   | 0.45        |
| 125               | 20.82       | 10.28 | 14.12 | 7.09   | 12.66 | 9.44  | 12.40                  | 4.80        |
| 130               | 28.42       | 14.13 | 19.47 | 10.62  | 21.28 | 15.92 | 18.31                  | 6.24        |
| 140               | 34.63       | 21.27 | 25.16 | 18.55  | 29.18 | 25.05 | 25.64                  | 5.71        |
| 150               | 38.24       | 24.36 | 28.69 | 26.11  | 34.61 | 32.35 | 30.73                  | 5.29        |
| 180               | 44.82       | 30.08 | 36.39 | 35.01  | 44.75 | 44.88 | 39.32                  | 6.37        |
| 240               | 53.18       | 38.61 | 45.64 | 46.14  | 52.15 | 56.75 | 48.75                  | 6.55        |
| 300               | 59.15       | 44.99 | 53.53 | 54.33  | 57.19 | 64.75 | 55.66                  | 6.59        |
| 360               | 63.76       | 49.84 | 61.13 | 60.71  | 61.27 | 70.21 | 61.15                  | 6.59        |
| 420               | 67.45       | 54.39 | 67.64 | 65.098 | 65.35 | 74.11 | 65.82                  | 6.41        |
| 480               | 70.57       | 59.57 | 72.72 | 71.64  | 67.85 | 82.34 | 70.78                  | 7.38        |
| 540               | 73.88       | 64.15 | 77.22 | 76.06  | 70.72 | 85.85 | 74.65                  | 7.22        |
| 600               | 76.34       | 67.64 | 80.32 | 79.93  | 73.05 | 88.06 | 77.56                  | 6.98        |
| 660               | 78.03       | 70.20 | 85.31 | 85.66  | 74.86 | 90.01 | 80.68                  | 7.54        |
| 720               | 80.19       | 73.09 | 86.13 | 88.50  | 77.83 | 91.70 | 82.91                  | 7.05        |

Table 42. Dissolution of Diclofenac Sodium from 10:(3.00+0.10) Diclofenac Sodium:(EC+chitosan) Solid Dispersion Prepared According to Formulation I in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |       |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|-------|-------|-------|------------------------|-------------|
|                   | 1           | 2     | 3     | 4     | 5     | 6     |                        |             |
| 30                | 0.55        | 0     | 0     | 0.14  | 0     | 0     | 0.02                   | 0.06        |
| 60                | 0.54        | 0     | 0     | 0.52  | 0.64  | 0.43  | 0.36                   | 0.28        |
| 90                | 2.09        | 0     | 0     | 1.66  | 0.75  | 0.58  | 0.85                   | 0.86        |
| 120               | 1.69        | 0     | 0     | 1.18  | 0.83  | 0.72  | 0.74                   | 0.66        |
| 125               | 9.83        | 10.37 | 3.64  | 2.69  | 4.60  | 3.86  | 5.83                   | 3.37        |
| 130               | 12.51       | 13.91 | 5.50  | 4.17  | 5.51  | 4.95  | 7.76                   | 4.27        |
| 140               | 15.13       | 16.86 | 7.6   | 6.88  | 7.83  | 7.55  | 10.35                  | 4.42        |
| 150               | 18.93       | 18.86 | 10.23 | 9.19  | 9.73  | 9.91  | 12.81                  | 4.73        |
| 180               | 28.20       | 25.75 | 28.06 | 14.89 | 16.11 | 15.34 | 21.39                  | 6.58        |
| 240               | 35.52       | 31.68 | 36.66 | 23.50 | 32.36 | 40.00 | 33.29                  | 5.67        |
| 300               | 40.80       | 36.17 | 41.03 | 32.07 | 44.27 | 45.45 | 39.97                  | 5.04        |
| 360               | 44.73       | 39.74 | 44.71 | 40.09 | 48.22 | 49.50 | 44.50                  | 4.80        |
| 420               | 48.05       | 42.53 | 47.48 | 45.07 | 51.59 | 52.65 | 47.90                  | 3.83        |
| 480               | 51.07       | 45.61 | 50.91 | 49.68 | 54.63 | 55.32 | 51.20                  | 3.53        |
| 540               | 53.12       | 48.26 | 53.72 | 54.00 | 56.70 | 57.39 | 53.87                  | 3.24        |
| 600               | 55.31       | 50.33 | 56.56 | 56.28 | 58.95 | 59.72 | 56.19                  | 3.33        |
| 660               | 57.22       | 51.87 | 58.53 | 58.62 | 60.95 | 61.99 | 58.20                  | 3.56        |
| 720               | 57.52       | 53.57 | 60.57 | 61.69 | 63.20 | 63.96 | 60.09                  | 3.91        |

Table 43. Dissolution of Diclofenac Sodium from 10:(1.00+0.10) Diclofenac Sodium:(EC+chitosan) Solid Dispersion Prepared According to Formulation II in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |       |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|-------|-------|-------|------------------------|-------------|
|                   | 1           | 2     | 3     | 4     | 5     | 6     |                        |             |
| 30                | 0.31        | 0     | 0.76  | 0.21  | 0     | 0.33  | 0.27                   | 0.28        |
| 60                | 0.61        | 0.94  | 1.66  | 0.43  | 0     | 1.86  | 0.92                   | 0.72        |
| 90                | 0.83        | 1.41  | 1.88  | 0.46  | 0     | 1.93  | 1.09                   | 0.79        |
| 120               | 2.04        | 3.23  | 2.50  | 0.61  | 0.36  | 1.04  | 1.63                   | 1.14        |
| 125               | 8.23        | 11.00 | 8.94  | 7.70  | 18.86 | 6.95  | 10.28                  | 4.42        |
| 130               | 13.04       | 18.01 | 13.14 | 12.97 | 24.82 | 10.89 | 15.48                  | 5.15        |
| 140               | 19.67       | 27.61 | 21.01 | 18.34 | 31.20 | 16.75 | 22.43                  | 5.70        |
| 150               | 24.65       | 33.87 | 27.04 | 22.98 | 35.56 | 21.09 | 27.53                  | 5.92        |
| 180               | 38.17       | 45.83 | 38.56 | 31.81 | 45.25 | 32.91 | 38.76                  | 5.92        |
| 240               | 50.17       | 57.72 | 51.48 | 43.79 | 57.38 | 46.21 | 51.13                  | 5.69        |
| 300               | 54.76       | 64.97 | 59.88 | 56.05 | 63.63 | 55.00 | 59.05                  | 4.48        |
| 360               | 57.89       | 70.44 | 66.14 | 62.86 | 67.83 | 57.15 | 63.72                  | 5.40        |
| 420               | 63.73       | 74.70 | 71.19 | 69.82 | 70.61 | 68.10 | 69.69                  | 3.64        |
| 480               | 70.39       | 77.71 | 75.23 | 74.57 | 73.09 | 71.80 | 73.80                  | 2.61        |
| 540               | 76.32       | 80.40 | 77.36 | 77.28 | 74.97 | 74.69 | 76.84                  | 2.07        |
| 600               | 79.45       | 82.66 | 79.82 | 79.80 | 76.46 | 76.61 | 79.13                  | 2.32        |
| 660               | 82.22       | 84.63 | 85.88 | 86.21 | 78.81 | 80.35 | 83.02                  | 3.05        |
| 720               | 83.87       | 87.91 | 87.03 | 88.93 | 82.88 | 81.53 | 85.36                  | 3.00        |

Table 44. Dissolution of Diclofenac Sodium from 10:(1.00+0.10) Diclofenac Sodium:(EC+chitosan) Solid Dispersion Prepared According to Formulation III in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |       |        |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|-------|--------|-------|------------------------|-------------|
|                   | 1           | 2     | 3     | 4     | 5      | 6     |                        |             |
| 30                | 1.62        | 1.59  | 1.49  | 1.28  | 0.25   | 1.97  | 1.37                   | 0.59        |
| 60                | 1.43        | 1.66  | 1.71  | 1.79  | 0.32   | 1.79  | 1.45                   | 0.59        |
| 90                | 1.47        | 1.66  | 1.60  | 1.86  | 0.18   | 1.69  | 1.41                   | 0.62        |
| 120               | 1.39        | 1.74  | 1.71  | 1.89  | 0.29   | 1.83  | 1.48                   | 0.61        |
| 125               | 16.16       | 11.47 | 14.01 | 17.20 | 15.23  | 18.50 | 15.43                  | 2.48        |
| 130               | 25.09       | 20.92 | 22.13 | 26.78 | 21.77  | 24.92 | 23.60                  | 2.31        |
| 140               | 37.41       | 32.91 | 33.70 | 39.50 | 32.73  | 33.15 | 34.90                  | 2.85        |
| 150               | 45.79       | 40.91 | 42.40 | 48.31 | 38.64  | 38.84 | 42.48                  | 3.88        |
| 180               | 59.98       | 55.59 | 57.84 | 63.71 | 52.63  | 49.83 | 56.60                  | 5.02        |
| 240               | 73.56       | 69.69 | 73.09 | 77.41 | 68.04  | 61.02 | 70.47                  | 5.66        |
| 300               | 80.88       | 76.65 | 80.60 | 89.38 | 76.67  | 67.78 | 78.66                  | 7.07        |
| 360               | 85.53       | 82.62 | 89.97 | 92.36 | 81.59  | 73.67 | 84.29                  | 6.66        |
| 420               | 92.27       | 88.51 | 92.55 | 94.08 | 87.53  | 78.06 | 88.97                  | 6.00        |
| 480               | 94.36       | 92.16 | 93.91 | 95.85 | 92.08  | 84.33 | 92.12                  | 4.07        |
| 540               | 95.63       | 93.60 | 96.94 | 96.15 | 94.77  | 89.18 | 94.38                  | 2.79        |
| 600               | 95.83       | 94.21 | 95.04 | 96.92 | 97.43  | 91.94 | 95.23                  | 2.00        |
| 660               | 96.17       | 95.14 | 96.45 | 97.28 | 99.62  | 94.80 | 96.58                  | 1.74        |
| 720               | 96.58       | 96.32 | 96.78 | 96.76 | 100.92 | 96.82 | 97.36                  | 1.75        |

Table 45. Dissolution of Diclofenac Sodium from 10:(3.00+0.10) Diclofenac Sodium:(EC+chitosan) Solid Dispersion Prepared According to Formulation IV in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |       |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|-------|-------|-------|------------------------|-------------|
|                   | 1           | 2     | 3     | 4     | 5     | 6     |                        |             |
| 30                | 5.82        | 9.30  | 1.55  | 3.11  | 2.81  | 3.03  | 4.27                   | 2.83        |
| 60                | 5.78        | 7.54  | 1.38  | 2.87  | 2.84  | 4.18  | 4.10                   | 2.24        |
| 90                | 5.63        | 5.45  | 1.38  | 2.83  | 2.91  | 3.78  | 3.66                   | 1.65        |
| 120               | 5.36        | 6.15  | 1.65  | 2.80  | 2.74  | 4.08  | 3.80                   | 1.72        |
| 125               | 12.23       | 12.09 | 9.05  | 17.71 | 10.21 | 11.93 | 12.20                  | 2.98        |
| 130               | 15.86       | 15.52 | 14.58 | 26.27 | 16.69 | 17.54 | 17.74                  | 4.30        |
| 140               | 23.05       | 24.02 | 24.17 | 38.02 | 29.78 | 22.09 | 26.86                  | 6.09        |
| 150               | 29.07       | 31.13 | 32.35 | 46.62 | 42.45 | 32.97 | 35.77                  | 7.05        |
| 180               | 44.04       | 46.14 | 56.22 | 60.59 | 59.18 | 48.73 | 52.48                  | 7.07        |
| 240               | 62.62       | 63.76 | 70.97 | 73.25 | 70.21 | 58.48 | 66.55                  | 5.76        |
| 300               | 73.89       | 74.08 | 80.65 | 83.56 | 80.67 | 67.17 | 76.67                  | 6.07        |
| 360               | 80.19       | 80.00 | 86.54 | 90.10 | 85.92 | 73.36 | 82.69                  | 6.01        |
| 420               | 84.51       | 83.87 | 89.17 | 92.41 | 90.17 | 80.95 | 86.85                  | 4.39        |
| 480               | 90.98       | 90.88 | 92.28 | 94.82 | 93.04 | 85.31 | 91.22                  | 3.24        |
| 540               | 93.09       | 93.95 | 94.26 | 96.28 | 94.89 | 88.57 | 93.51                  | 2.64        |
| 600               | 94.54       | 95.21 | 95.88 | 96.97 | 95.64 | 91.34 | 94.93                  | 1.93        |
| 660               | 95.58       | 96.60 | 96.10 | 97.07 | 96.29 | 95.00 | 96.11                  | 0.74        |
| 720               | 96.54       | 96.70 | 96.95 | 96.88 | 97.01 | 96.80 | 96.81                  | 0.17        |

Table 46. Dissolution of Diclofenac Sodium from 10:(3.00+0.02) Diclofenac Sodium:(EC+chitosan) Solid Dispersion Prepared According to Formulation V in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |       |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|-------|-------|-------|------------------------|-------------|
|                   | 1           | 2     | 3     | 4     | 5     | 6     |                        |             |
| 30                | 3.89        | 4.79  | 6.57  | 6.11  | 5.45  | 5.60  | 5.40                   | 0.96        |
| 60                | 3.31        | 4.79  | 6.64  | 7.39  | 5.02  | 5.45  | 5.43                   | 1.44        |
| 90                | 4.03        | 5.05  | 5.79  | 2.67  | 5.09  | 5.34  | 5.16                   | 0.63        |
| 120               | 3.96        | 5.08  | 5.54  | 5.45  | 4.98  | 5.49  | 5.08                   | 0.60        |
| 125               | 8.55        | 10.55 | 11.28 | 11.75 | 10.14 | 10.26 | 10.42                  | 1.11        |
| 130               | 12.09       | 12.55 | 14.44 | 14.87 | 13.06 | 13.16 | 13.36                  | 1.08        |
| 140               | 18.25       | 17.60 | 17.70 | 20.09 | 19.04 | 18.57 | 18.54                  | 0.93        |
| 150               | 22.64       | 21.96 | 23.82 | 24.52 | 23.57 | 23.14 | 23.28                  | 0.90        |
| 180               | 33.12       | 31.41 | 28.70 | 34.61 | 34.41 | 36.11 | 33.06                  | 2.66        |
| 240               | 46.67       | 44.33 | 39.57 | 48.47 | 48.87 | 49.81 | 46.29                  | 3.82        |
| 300               | 56.43       | 53.45 | 54.96 | 58.93 | 58.43 | 58.71 | 56.82                  | 2.26        |
| 360               | 63.63       | 60.83 | 64.70 | 67.13 | 65.55 | 65.77 | 64.60                  | 2.18        |
| 420               | 68.84       | 66.34 | 71.60 | 73.34 | 70.98 | 71.36 | 70.41                  | 2.46        |
| 480               | 73.07       | 71.09 | 76.79 | 77.71 | 74.95 | 75.79 | 74.90                  | 2.45        |
| 540               | 78.67       | 76.64 | 80.34 | 83.26 | 79.91 | 52.23 | 80.18                  | 2.39        |
| 600               | 81.79       | 80.54 | 85.70 | 86.15 | 83.85 | 86.50 | 84.09                  | 2.47        |
| 660               | 84.50       | 83.62 | 88.63 | 89.34 | 86.71 | 89.88 | 87.11                  | 2.61        |
| 720               | 86.58       | 85.82 | 90.28 | 88.65 | 88.48 | 89.32 | 88.19                  | 1.68        |

**Table 47.** Dissolution of Diclofenac Sodium from 10:(1.00+0.02) Diclofenac Sodium:(EC+chitosan) Solid Dispersion Prepared According to Formulation VI in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |       |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|-------|-------|-------|------------------------|-------------|
|                   | 1           | 2     | 3     | 4     | 5     | 6     |                        |             |
| 30                | 0           | 0.50  | 1.08  | 0.72  | 0.99  | 0.25  | 0.59                   | 0.42        |
| 60                | 0.95        | 0.69  | 0.94  | 1.20  | 1.40  | 2.31  | 1.25                   | 0.57        |
| 90                | 1.3         | 3.75  | 4.42  | 2.15  | 1.69  | 2.90  | 2.72                   | 1.19        |
| 120               | 3.27        | 3.49  | 3.55  | 1.64  | 1.84  | 2.75  | 2.76                   | 0.84        |
| 125               | 11.16       | 15.55 | 6.77  | 11.48 | 10.16 | 14.09 | 11.54                  | 3.08        |
| 130               | 18.28       | 23.12 | 10.24 | 17.87 | 16.00 | 17.57 | 17.18                  | 4.16        |
| 140               | 28.03       | 31.35 | 20.27 | 23.97 | 25.85 | 27.03 | 26.08                  | 3.76        |
| 150               | 34.39       | 37.37 | 25.58 | 29.99 | 34.11 | 39.47 | 33.49                  | 5.04        |
| 180               | 46.43       | 47.71 | 37.60 | 40.90 | 49.63 | 48.56 | 45.14                  | 4.79        |
| 240               | 58.61       | 58.77 | 50.28 | 54.60 | 62.29 | 55.63 | 56.70                  | 4.15        |
| 300               | 65.96       | 65.38 | 57.69 | 61.65 | 69.04 | 61.87 | 63.60                  | 4.00        |
| 360               | 71.52       | 69.89 | 65.06 | 66.49 | 73.64 | 65.99 | 68.77                  | 3.44        |
| 420               | 75.85       | 73.97 | 71.09 | 69.36 | 77.17 | 70.47 | 72.99                  | 3.15        |
| 480               | 78.91       | 76.87 | 74.99 | 73.05 | 79.09 | 72.85 | 75.96                  | 2.77        |
| 540               | 81.64       | 78.45 | 77.12 | 77.07 | 81.96 | 75.84 | 78.68                  | 2.56        |
| 600               | 83.93       | 79.60 | 78.46 | 78.32 | 83.69 | 81.88 | 80.98                  | 2.54        |
| 660               | 85.93       | 81.38 | 82.03 | 80.69 | 89.89 | 85.93 | 84.31                  | 3.56        |
| 720               | 89.26       | 87.37 | 89.21 | 85.83 | 91.68 | 89.38 | 88.79                  | 1.99        |

**Table 48.** Dissolution of Diclofenac Sodium from 10:(1.00+0.02) Diclofenac Sodium:(EC+chitosan) Solid Dispersion Prepared According to Formulation VII in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |       |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|-------|-------|-------|------------------------|-------------|
|                   | 1           | 2     | 3     | 4     | 5     | 6     |                        |             |
| 30                | 2.66        | 2.99  | 3.03  | 2.51  | 4.34  | 2.98  | 3.09                   | 0.65        |
| 60                | 2.29        | 2.52  | 3.03  | 2.26  | 3.37  | 2.94  | 2.74                   | 0.45        |
| 90                | 2.37        | 2.60  | 2.89  | 2.23  | 3.65  | 3.18  | 2.82                   | 0.53        |
| 120               | 2.47        | 2.67  | 3.14  | 2.30  | 3.55  | 3.70  | 2.97                   | 0.58        |
| 125               | 21.62       | 23.56 | 20.54 | 19.92 | 17.70 | 9.08  | 18.74                  | 5.11        |
| 130               | 33.11       | 30.87 | 30.83 | 27.89 | 24.92 | 15.69 | 27.22                  | 6.32        |
| 140               | 46.52       | 39.17 | 43.34 | 38.12 | 36.81 | 26.44 | 38.40                  | 6.88        |
| 150               | 55.48       | 45.05 | 52.42 | 45.68 | 45.07 | 34.89 | 46.43                  | 7.15        |
| 180               | 71.12       | 58.31 | 67.55 | 59.69 | 61.65 | 53.12 | 61.91                  | 6.51        |
| 240               | 81.69       | 71.34 | 79.05 | 73.39 | 77.78 | 71.88 | 75.86                  | 4.25        |
| 300               | 91.70       | 80.79 | 87.25 | 89.14 | 90.12 | 81.70 | 86.12                  | 4.41        |
| 360               | 96.90       | 85.94 | 92.32 | 89.89 | 94.30 | 86.84 | 91.03                  | 4.28        |
| 420               | 98.42       | 89.57 | 94.47 | 92.16 | 96.99 | 89.61 | 93.54                  | 3.73        |
| 480               | 99.51       | 92.47 | 95.65 | 94.52 | 96.99 | 96.29 | 95.91                  | 2.37        |
| 540               | 99.24       | 93.37 | 95.65 | 95.15 | 97.93 | 97.70 | 96.51                  | 2.16        |
| 600               | 98.68       | 95.11 | 96.17 | 95.24 | 99.45 | 98.45 | 97.18                  | 1.90        |
| 660               | 99.54       | 96.39 | 96.47 | 95.31 | 99.61 | 99.78 | 97.85                  | 2.01        |
| 720               | 99.44       | 96.78 | 96.73 | 95.97 | 99.68 | 97.77 | 97.73                  | 1.53        |

Table 49. Dissolution of Diclofenac Sodium from 10:(3.00+0.02) Diclofenac Sodium:(EC+chitosan) Solid Dispersion Prepared According to Formulation VIII in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |       |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|-------|-------|-------|------------------------|-------------|
|                   | 1           | 2     | 3     | 4     | 5     | 6     |                        |             |
| 30                | 2.91        | 4.72  | 4.07  | 2.98  | 4.01  | 3.74  | 3.74                   | 0.69        |
| 60                | 3.07        | 4.68  | 4.44  | 3.35  | 3.68  | 5.55  | 4.13                   | 0.93        |
| 90                | 3.44        | 4.97  | 4.24  | 3.28  | 3.91  | 5.45  | 4.22                   | 0.86        |
| 120               | 3.75        | 4.72  | 4.40  | 3.28  | 3.71  | 5.28  | 4.19                   | 0.74        |
| 125               | 14.09       | 10.40 | 17.55 | 12.92 | 13.70 | 14.64 | 13.88                  | 2.33        |
| 130               | 18.60       | 14.18 | 25.11 | 18.13 | 21.46 | 20.16 | 19.61                  | 3.65        |
| 140               | 26.48       | 23.13 | 37.11 | 26.79 | 32.15 | 30.41 | 29.35                  | 4.95        |
| 150               | 33.22       | 32.67 | 46.80 | 34.09 | 39.79 | 38.23 | 37.47                  | 5.40        |
| 180               | 46.12       | 52.37 | 64.03 | 46.84 | 54.46 | 55.63 | 53.24                  | 6.57        |
| 240               | 61.70       | 74.57 | 75.27 | 66.35 | 67.72 | 70.67 | 69.38                  | 5.18        |
| 300               | 75.83       | 82.03 | 86.27 | 74.49 | 75.63 | 80.40 | 79.11                  | 4.60        |
| 360               | 82.30       | 92.25 | 88.58 | 84.37 | 85.08 | 85.69 | 86.38                  | 3.53        |
| 420               | 86.61       | 94.86 | 93.68 | 89.27 | 90.27 | 89.85 | 90.76                  | 3.03        |
| 480               | 94.35       | 96.71 | 97.06 | 92.61 | 93.32 | 92.42 | 94.41                  | 2.03        |
| 540               | 96.71       | 98.73 | 98.21 | 95.67 | 95.71 | 94.81 | 96.64                  | 1.55        |
| 600               | 98.42       | 98.76 | 99.28 | 97.72 | 97.79 | 96.65 | 98.10                  | 0.92        |
| 660               | 99.72       | 99.38 | 99.76 | 99.63 | 99.30 | 97.68 | 99.25                  | 0.79        |
| 720               | 99.31       | 99.94 | 99.28 | 99.75 | 99.79 | 99.28 | 99.56                  | 0.30        |

Table 50. Dissolution of Diclofenac Sodium from 10:(2.50+0.02) Diclofenac Sodium:(EC+chitosan) Solid Dispersion Prepared According to Formulation IX in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |       |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|-------|-------|-------|------------------------|-------------|
|                   | 1           | 2     | 3     | 4     | 5     | 6     |                        |             |
| 30                | 5.06        | 5.30  | 3.95  | 4.51  | 5.20  | 4.52  | 4.76                   | 0.52        |
| 60                | 5.43        | 5.70  | 3.55  | 4.59  | 2.46  | 4.26  | 4.33                   | 1.21        |
| 90                | 4.84        | 5.15  | 4.36  | 2.67  | 1.84  | 3.45  | 3.72                   | 1.30        |
| 120               | 3.34        | 5.08  | 2.27  | 4.26  | 2.35  | 3.16  | 3.41                   | 1.10        |
| 125               | 8.37        | 9.66  | 9.81  | 11.26 | 12.57 | 10.24 | 10.32                  | 1.45        |
| 130               | 10.36       | 13.14 | 11.16 | 14.54 | 14.60 | 13.13 | 12.82                  | 1.74        |
| 140               | 14.11       | 16.40 | 16.22 | 20.11 | 18.72 | 18.35 | 17.32                  | 2.15        |
| 150               | 17.92       | 20.19 | 19.53 | 24.65 | 23.38 | 23.20 | 21.48                  | 2.64        |
| 180               | 28.79       | 26.64 | 30.71 | 36.29 | 35.40 | 36.64 | 32.41                  | 4.27        |
| 240               | 43.22       | 43.02 | 47.15 | 50.24 | 46.65 | 49.33 | 46.60                  | 3.01        |
| 300               | 53.53       | 51.83 | 60.58 | 58.50 | 65.13 | 59.16 | 58.12                  | 4.84        |
| 360               | 61.15       | 58.44 | 67.95 | 65.10 | 73.41 | 68.16 | 65.70                  | 5.37        |
| 420               | 67.48       | 64.39 | 75.23 | 69.87 | 79.70 | 72.21 | 71.48                  | 5.50        |
| 480               | 73.22       | 69.21 | 49.92 | 73.29 | 87.96 | 78.68 | 77.05                  | 6.64        |
| 540               | 77.30       | 73.99 | 84.88 | 76.20 | 91.46 | 81.67 | 80.92                  | 6.49        |
| 600               | 80.81       | 78.31 | 89.98 | 80.88 | 94.25 | 85.19 | 84.92                  | 6.16        |
| 660               | 86.91       | 82.40 | 92.49 | 82.60 | 95.75 | 88.45 | 88.10                  | 5.33        |
| 720               | 89.93       | 86.12 | 93.72 | 85.45 | 98.35 | 90.54 | 90.69                  | 4.83        |

Table 51. Dissolution of Diclofenac Sodium from 10:(2.5+0.02) Diclofenac:(EC+chitosan) Solid Dispersion Tablet Prepared According to Formulation I in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |       |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|-------|-------|-------|------------------------|-------------|
|                   | 1           | 2     | 3     | 4     | 5     | 6     |                        |             |
| 30                | 0           | 0.14  | 0.30  | 0.83  | 1.16  | 0.87  | 0.55                   | 0.47        |
| 60                | 0.18        | 0.64  | 0.41  | 1.29  | 1.64  | 1.33  | 0.92                   | 0.58        |
| 90                | 0.41        | 0.94  | 0.56  | 2.13  | 2.39  | 1.64  | 1.35                   | 0.83        |
| 120               | 0.49        | 0.98  | 0.71  | 1.56  | 2.92  | 1.79  | 1.41                   | 0.89        |
| 125               | 3.41        | 5.47  | 2.84  | 6.81  | 10.68 | 8.78  | 6.33                   | 3.05        |
| 130               | 5.44        | 8.69  | 5.12  | 9.31  | 15.54 | 13.75 | 9.64                   | 4.26        |
| 140               | 9.25        | 13.89 | 9.37  | 14.18 | 22.04 | 21.64 | 15.06                  | 5.66        |
| 150               | 12.30       | 18.24 | 12.69 | 18.59 | 26.06 | 27.51 | 19.23                  | 6.44        |
| 180               | 19.50       | 26.84 | 20.23 | 27.54 | 35.73 | 38.92 | 28.13                  | 7.91        |
| 240               | 29.04       | 38.08 | 30.44 | 37.53 | 46.51 | 50.62 | 38.70                  | 8.56        |
| 300               | 36.11       | 45.03 | 37.63 | 45.47 | 53.91 | 56.93 | 45.85                  | 8.38        |
| 360               | 41.05       | 51.61 | 43.29 | 51.84 | 60.92 | 63.48 | 52.03                  | 9.03        |
| 420               | 46.43       | 57.06 | 48.01 | 56.04 | 65.48 | 67.27 | 56.72                  | 8.61        |
| 480               | 50.48       | 60.45 | 53.02 | 60.86 | 69.10 | 71.55 | 60.91                  | 8.38        |
| 540               | 54.08       | 64.94 | 57.47 | 64.36 | 72.57 | 74.76 | 64.70                  | 8.10        |
| 600               | 57.24       | 69.02 | 61.75 | 67.74 | 74.83 | 78.52 | 68.18                  | 7.91        |
| 660               | 59.09       | 71.89 | 65.18 | 71.18 | 77.01 | 79.97 | 70.72                  | 7.65        |
| 720               | 61.18       | 74.67 | 68.30 | 73.38 | 79.16 | 82.35 | 73.17                  | 7.61        |

Table 52. Dissolution of Diclofenac Sodium from 10:(2.5+0.02) Diclofenac:(EC+chitosan) Solid Dispersion Tablet Prepared According to Formulation II in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |       |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|-------|-------|-------|------------------------|-------------|
|                   | 1           | 2     | 3     | 4     | 5     | 6     |                        |             |
| 30                | 0.51        | 0.88  | 0.54  | 0.91  | 0.69  | 1.06  | 0.77                   | 0.22        |
| 60                | 0.62        | 0.36  | 0.98  | 0.72  | 1.16  | 1.94  | 0.96                   | 0.55        |
| 90                | 1.06        | 0.66  | 1.16  | 1.05  | 1.56  | 2.24  | 1.29                   | 0.55        |
| 120               | 1.17        | 1.15  | 2.03  | 0.98  | 1.66  | 3.37  | 1.73                   | 0.89        |
| 125               | 7.07        | 8.61  | 7.25  | 4.70  | 11.51 | 16.30 | 9.24                   | 4.12        |
| 130               | 9.91        | 11.45 | 9.43  | 6.31  | 15.81 | 20.52 | 12.24                  | 5.11        |
| 140               | 14.81       | 16.97 | 17.32 | 9.51  | 22.83 | 28.74 | 18.36                  | 6.66        |
| 150               | 18.62       | 21.01 | 21.93 | 11.91 | 28.01 | 33.95 | 22.57                  | 7.63        |
| 180               | 25.63       | 27.71 | 32.20 | 21.01 | 39.33 | 40.80 | 31.11                  | 7.83        |
| 240               | 36.62       | 38.39 | 37.63 | 39.60 | 52.97 | 53.02 | 43.04                  | 7.77        |
| 300               | 45.39       | 46.86 | 42.40 | 46.58 | 58.62 | 58.73 | 49.76                  | 7.08        |
| 360               | 52.34       | 53.92 | 47.14 | 50.74 | 59.91 | 63.30 | 54.56                  | 6.00        |
| 420               | 58.36       | 59.34 | 50.52 | 55.81 | 64.18 | 66.46 | 59.11                  | 5.74        |
| 480               | 63.29       | 63.89 | 54.41 | 59.31 | 66.60 | 69.61 | 62.85                  | 5.38        |
| 540               | 67.43       | 67.81 | 57.34 | 63.06 | 69.13 | 73.16 | 66.32                  | 5.47        |
| 600               | 71.73       | 70.92 | 60.82 | 67.15 | 72.26 | 77.04 | 69.99                  | 5.49        |
| 660               | 73.42       | 72.83 | 62.83 | 69.52 | 74.96 | 77.97 | 71.92                  | 5.24        |
| 720               | 76.37       | 74.81 | 65.50 | 72.55 | 77.30 | 79.99 | 74.42                  | 4.99        |

Table 53. Dissolution of Diclofenac Sodium from 10:(2.5+0.02) Diclofenac:(EC+chitosan) Solid Dispersion Tablet Prepared According to Formulation III in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |       |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|-------|-------|-------|------------------------|-------------|
|                   | 1           | 2     | 3     | 4     | 5     | 6     |                        |             |
| 30                | 0.83        | 0.10  | 0.36  | 1.47  | 1.14  | 1.93  | 0.97                   | 0.69        |
| 60                | 0.58        | 0.62  | 0.80  | 0.32  | 0.73  | 0.36  | 0.57                   | 0.19        |
| 90                | 0.65        | 0.99  | 1.43  | 0.54  | 1.29  | 0.90  | 0.97                   | 0.35        |
| 120               | 0.79        | 1.25  | 1.39  | 0.69  | 1.58  | 0.39  | 1.02                   | 0.46        |
| 125               | 5.35        | 7.33  | 8.47  | 3.94  | 7.59  | 5.26  | 6.32                   | 1.73        |
| 130               | 7.16        | 9.90  | 11.42 | 5.67  | 10.86 | 7.59  | 8.77                   | 2.29        |
| 140               | 11.00       | 14.67 | 17.34 | 9.06  | 15.93 | 12.28 | 13.38                  | 3.14        |
| 150               | 13.90       | 18.07 | 22.42 | 12.18 | 20.43 | 15.72 | 17.12                  | 3.92        |
| 180               | 20.35       | 25.38 | 32.50 | 19.59 | 30.78 | 22.52 | 25.19                  | 5.42        |
| 240               | 29.62       | 36.16 | 42.67 | 30.33 | 43.99 | 31.23 | 35.67                  | 6.38        |
| 300               | 38.08       | 44.58 | 52.74 | 38.04 | 51.59 | 37.91 | 43.82                  | 6.95        |
| 360               | 44.29       | 50.42 | 58.96 | 43.02 | 55.53 | 45.26 | 49.58                  | 6.54        |
| 420               | 49.52       | 55.46 | 63.05 | 47.08 | 59.93 | 50.78 | 54.30                  | 6.28        |
| 480               | 55.61       | 61.03 | 68.60 | 52.06 | 63.94 | 56.24 | 59.58                  | 6.10        |
| 540               | 59.53       | 65.07 | 71.59 | 56.48 | 68.64 | 62.40 | 63.95                  | 5.65        |
| 600               | 66.01       | 69.81 | 75.35 | 60.93 | 70.61 | 68.33 | 68.51                  | 4.83        |
| 660               | 72.19       | 72.65 | 77.31 | 64.03 | 72.32 | 74.31 | 72.14                  | 4.42        |
| 720               | 74.43       | 76.12 | 79.90 | 68.01 | 73.92 | 78.02 | 75.07                  | 4.12        |

Table 54. Dissolution of Diclofenac Sodium from 10:(2.5+0.02) Diclofenac:(EC+chitosan) Solid Dispersion Tablet Prepared According to Formulation IV in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |       |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|-------|-------|-------|------------------------|-------------|
|                   | 1           | 2     | 3     | 4     | 5     | 6     |                        |             |
| 30                | 0.95        | 1.13  | 0.43  | 0.10  | 0.69  | 0.94  | 0.71                   | 0.38        |
| 60                | 0.29        | 0.69  | 0.32  | 0.29  | 0.54  | 0.72  | 0.48                   | 0.20        |
| 90                | 0.87        | 0.69  | 0.18  | 0.18  | 0.65  | 1.27  | 0.64                   | 0.42        |
| 120               | 1.06        | 0.65  | 0.47  | 0.80  | 0.62  | 1.05  | 0.78                   | 0.24        |
| 125               | 5.47        | 4.01  | 3.36  | 4.20  | 3.95  | 6.61  | 4.60                   | 1.21        |
| 130               | 7.26        | 5.76  | 5.05  | 7.02  | 5.21  | 8.21  | 6.42                   | 1.27        |
| 140               | 11.63       | 9.72  | 8.23  | 11.03 | 8.35  | 11.47 | 10.07                  | 1.54        |
| 150               | 14.83       | 13.32 | 11.24 | 14.39 | 11.72 | 14.46 | 13.33                  | 1.52        |
| 180               | 23.20       | 21.86 | 18.29 | 20.42 | 19.72 | 23.17 | 21.11                  | 1.98        |
| 240               | 32.10       | 32.16 | 26.63 | 30.30 | 31.43 | 33.32 | 30.99                  | 2.35        |
| 300               | 37.12       | 38.59 | 31.63 | 35.17 | 39.26 | 42.49 | 37.38                  | 3.72        |
| 360               | 40.07       | 43.54 | 34.97 | 38.68 | 44.85 | 48.92 | 41.84                  | 4.95        |
| 420               | 43.04       | 49.05 | 38.08 | 41.86 | 50.97 | 54.93 | 46.32                  | 6.35        |
| 480               | 47.01       | 51.53 | 41.00 | 45.11 | 54.18 | 59.78 | 49.77                  | 6.77        |
| 540               | 48.47       | 54.89 | 43.28 | 48.66 | 58.67 | 62.34 | 52.72                  | 7.16        |
| 600               | 50.42       | 57.70 | 45.56 | 51.01 | 61.32 | 66.40 | 55.40                  | 7.77        |
| 660               | 51.91       | 60.24 | 47.29 | 53.80 | 63.53 | 68.51 | 57.55                  | 7.93        |
| 720               | 53.63       | 62.61 | 49.14 | 56.86 | 64.76 | 70.24 | 59.54                  | 7.76        |

Table 55. Dissolution of Diclofenac Sodium from 10:(2.5+0.02) Diclofenac:(EC+chitosan) Solid Dispersion Tablet Prepared According to Formulation V in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |       |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|-------|-------|-------|------------------------|-------------|
|                   | 1           | 2     | 3     | 4     | 5     | 6     |                        |             |
| 30                | 2.67        | 3.70  | 3.22  | 2.62  | 1.52  | 1.43  | 2.53                   | 0.91        |
| 60                | 2.64        | 3.48  | 3.99  | 2.88  | 0.81  | 0.80  | 2.43                   | 1.35        |
| 90                | 3.15        | 3.48  | 4.69  | 3.66  | 1.26  | 0.91  | 2.86                   | 1.47        |
| 120               | 3.15        | 4.54  | 3.66  | 4.33  | 1.26  | 1.28  | 3.04                   | 1.45        |
| 125               | 13.96       | 15.53 | 13.86 | 15.15 | 8.73  | 8.10  | 12.56                  | 3.28        |
| 130               | 18.93       | 19.69 | 17.15 | 20.27 | 13.18 | 12.86 | 17.01                  | 3.27        |
| 140               | 30.29       | 26.38 | 22.58 | 28.52 | 17.84 | 15.88 | 23.58                  | 5.84        |
| 150               | 34.06       | 36.59 | 35.31 | 36.70 | 23.53 | 20.18 | 31.06                  | 7.27        |
| 180               | 47.97       | 46.72 | 42.05 | 48.90 | 32.72 | 28.26 | 41.10                  | 8.67        |
| 240               | 60.46       | 58.63 | 50.73 | 63.10 | 43.42 | 44.90 | 53.54                  | 8.37        |
| 300               | 68.57       | 66.05 | 60.18 | 70.82 | 54.90 | 47.77 | 61.38                  | 8.85        |
| 360               | 72.60       | 73.85 | 65.56 | 74.66 | 64.78 | 51.39 | 67.14                  | 8.80        |
| 420               | 77.64       | 78.70 | 69.53 | 77.53 | 69.97 | 57.54 | 71.82                  | 8.08        |
| 480               | 83.52       | 82.72 | 73.07 | 82.78 | 77.82 | 61.49 | 76.90                  | 8.55        |
| 540               | 90.66       | 90.17 | 78.11 | 86.82 | 83.86 | 72.09 | 83.62                  | 7.29        |
| 600               | 92.28       | 92.48 | 82.75 | 91.13 | 90.24 | 80.72 | 88.27                  | 5.16        |
| 660               | 93.80       | 94.77 | 88.02 | 91.77 | 92.79 | 84.14 | 90.88                  | 4.04        |
| 720               | 95.62       | 98.54 | 91.46 | 93.81 | 94.79 | 84.89 | 93.22                  | 4.69        |

Table 56. Dissolution of Diclofenac Sodium from 10:(2.5+0.02) Diclofenac:(EC+chitosan) Solid Dispersion Tablet Prepared According to Formulation VI in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |       |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|-------|-------|-------|------------------------|-------------|
|                   | 1           | 2     | 3     | 4     | 5     | 6     |                        |             |
| 30                | 1.50        | 2.05  | 2.16  | 0.54  | 1.06  | 1.02  | 1.39                   | 0.63        |
| 60                | 2.35        | 1.79  | 2.56  | 0.99  | 1.94  | 1.39  | 1.84                   | 0.59        |
| 90                | 1.80        | 2.71  | 3.11  | 0.88  | 1.43  | 1.72  | 1.94                   | 0.83        |
| 120               | 2.61        | 2.96  | 3.92  | 1.57  | 1.83  | 2.35  | 2.54                   | 0.84        |
| 125               | 10.49       | 12.52 | 14.44 | 9.67  | 10.42 | 13.98 | 11.92                  | 2.02        |
| 130               | 16.04       | 17.62 | 20.58 | 13.09 | 15.60 | 20.58 | 17.25                  | 2.96        |
| 140               | 22.62       | 25.99 | 28.61 | 19.31 | 22.51 | 29.27 | 24.72                  | 3.90        |
| 150               | 27.84       | 31.51 | 35.61 | 25.19 | 27.43 | 35.38 | 30.49                  | 4.37        |
| 180               | 36.75       | 44.19 | 48.48 | 34.35 | 36.89 | 48.61 | 41.55                  | 6.35        |
| 240               | 51.01       | 62.18 | 62.31 | 53.76 | 52.89 | 59.26 | 56.90                  | 4.97        |
| 300               | 59.16       | 73.56 | 75.02 | 59.48 | 59.03 | 66.26 | 65.55                  | 7.28        |
| 360               | 67.67       | 81.37 | 79.79 | 65.62 | 64.28 | 72.09 | 71.80                  | 7.31        |
| 420               | 75.98       | 85.74 | 83.16 | 70.57 | 68.83 | 74.78 | 76.51                  | 6.74        |
| 480               | 88.18       | 88.42 | 86.72 | 76.61 | 71.55 | 78.26 | 81.62                  | 7.11        |
| 540               | 87.41       | 90.97 | 88.60 | 80.60 | 75.40 | 79.72 | 83.78                  | 6.08        |
| 600               | 91.24       | 93.42 | 90.78 | 86.94 | 79.93 | 88.94 | 88.54                  | 4.75        |
| 660               | 91.80       | 94.97 | 91.48 | 89.36 | 80.72 | 92.69 | 90.17                  | 4.97        |
| 720               | 93.73       | 95.10 | 93.48 | 92.18 | 84.30 | 93.62 | 92.07                  | 3.92        |

Table 57. Dissolution of Diclofenac Sodium from 10:(2.5+0.02) Diclofenac:(EC+chitosan) Solid Dispersion Tablet Prepared According to Formulation VII in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |        |        |       |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|--------|--------|-------|-------|-------|------------------------|-------------|
|                   | 1           | 2      | 3      | 4     | 5     | 6     |                        |             |
| 30                | 0.78        | 0.89   | 1.16   | 0.89  | 0.70  | 0.95  | 0.97                   | 0.16        |
| 60                | 1.47        | 1.18   | 1.20   | 1.50  | 1.13  | 0.74  | 1.20                   | 0.28        |
| 90                | 2.19        | 1.61   | 2.08   | 2.07  | 1.66  | 0.91  | 1.75                   | 0.48        |
| 120               | 2.26        | 2.23   | 2.76   | 2.57  | 1.88  | 1.41  | 2.19                   | 0.49        |
| 125               | 14.64       | 9.48   | 10.98  | 13.40 | 10.48 | 9.83  | 11.47                  | 2.08        |
| 130               | 19.71       | 13.93  | 15.61  | 19.28 | 15.07 | 13.70 | 16.22                  | 2.64        |
| 140               | 27.51       | 20.21  | 22.26  | 26.77 | 23.22 | 20.15 | 23.35                  | 3.17        |
| 150               | 34.37       | 26.09  | 27.95  | 33.46 | 28.97 | 24.57 | 29.24                  | 3.94        |
| 180               | 49.16       | 38.93  | 38.33  | 48.39 | 41.77 | 32.99 | 41.60                  | 6.25        |
| 240               | 66.25       | 60.52  | 51.37  | 60.67 | 57.43 | 47.12 | 57.23                  | 6.94        |
| 300               | 78.31       | 72.97  | 59.81  | 68.01 | 70.59 | 55.35 | 67.51                  | 8.52        |
| 360               | 83.51       | 79.57  | 77.64  | 73.14 | 77.01 | 60.93 | 75.30                  | 7.81        |
| 420               | 88.94       | 87.27  | 84.63  | 79.05 | 82.66 | 66.32 | 81.48                  | 8.20        |
| 480               | 94.24       | 91.56  | 91.57  | 83.86 | 88.60 | 71.67 | 86.92                  | 8.26        |
| 540               | 97.13       | 98.62  | 97.70  | 88.96 | 93.86 | 76.90 | 92.20                  | 8.28        |
| 600               | 98.43       | 100.15 | 99.97  | 93.20 | 97.58 | 83.40 | 95.46                  | 6.42        |
| 660               | 99.89       | 103.04 | 99.40  | 95.84 | 98.19 | 86.70 | 97.18                  | 5.64        |
| 720               | 100.83      | 104.41 | 100.45 | 98.52 | 99.61 | 89.11 | 98.82                  | 5.16        |

Table 58. Dissolution of Diclofenac Sodium from 10:(2.5+0.02) Diclofenac:(EC+chitosan) Solid Dispersion Tablet Prepared According to Formulation VIII in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |       |       |        | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|-------|-------|--------|------------------------|-------------|
|                   | 1           | 2     | 3     | 4     | 5     | 6      |                        |             |
| 30                | 0.50        | 0.79  | 0.89  | 0.79  | 1.59  | 1.07   | 0.94                   | 0.37        |
| 60                | 1.69        | 1.19  | 1.68  | 1.26  | 2.46  | 2.37   | 1.78                   | 0.54        |
| 90                | 1.33        | 1.99  | 3.26  | 2.31  | 3.40  | 2.83   | 2.52                   | 0.79        |
| 120               | 2.23        | 2.10  | 2.91  | 2.89  | 3.62  | 4.27   | 3.00                   | 0.83        |
| 125               | 20.20       | 13.97 | 19.34 | 20.00 | 20.80 | 22.55  | 19.48                  | 2.91        |
| 130               | 26.67       | 20.57 | 27.02 | 30.29 | 28.09 | 29.05  | 26.95                  | 3.40        |
| 140               | 33.71       | 28.78 | 32.13 | 39.53 | 40.55 | 39.85  | 35.76                  | 4.90        |
| 150               | 39.67       | 35.05 | 37.64 | 44.85 | 47.80 | 48.22  | 42.21                  | 5.53        |
| 180               | 50.70       | 46.09 | 49.21 | 57.00 | 60.10 | 59.68  | 53.80                  | 5.91        |
| 240               | 61.53       | 58.04 | 60.82 | 66.96 | 71.28 | 73.99  | 65.44                  | 6.34        |
| 300               | 67.39       | 65.53 | 66.51 | 76.82 | 81.36 | 82.31  | 73.32                  | 7.75        |
| 360               | 74.17       | 70.09 | 72.90 | 86.42 | 84.92 | 90.94  | 79.91                  | 8.58        |
| 420               | 76.55       | 72.59 | 75.96 | 85.67 | 86.88 | 93.45  | 81.85                  | 8.04        |
| 480               | 79.13       | 78.60 | 81.86 | 89.76 | 89.31 | 94.50  | 85.53                  | 6.56        |
| 540               | 83.56       | 88.84 | 88.97 | 94.75 | 92.43 | 96.24  | 90.80                  | 4.64        |
| 600               | 88.68       | 92.03 | 93.03 | 97.36 | 95.33 | 99.42  | 94.31                  | 3.87        |
| 660               | 92.80       | 95.05 | 95.56 | 98.38 | 97.02 | 100.10 | 96.49                  | 2.59        |
| 720               | 93.81       | 96.03 | 93.87 | 98.90 | 99.49 | 100.92 | 91.17                  | 3.03        |

Table 59. Dissolution of Diclofenac Sodium from 10:(2.5+0.02) Diclofenac:(EC+chitosan) Solid Dispersion Tablet Prepared According to Formulation IX in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |       |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|-------|-------|-------|------------------------|-------------|
|                   | 1           | 2     | 3     | 4     | 5     | 6     |                        |             |
| 30                | 0.36        | 0.69  | 0.43  | 0.47  | 0.55  | 1.23  | 0.62                   | 0.32        |
| 60                | 1.02        | 1.39  | 1.12  | 1.92  | 1.47  | 1.82  | 1.46                   | 0.36        |
| 90                | 1.64        | 1.87  | 1.96  | 2.14  | 2.25  | 2.69  | 2.09                   | 0.36        |
| 120               | 1.93        | 1.94  | 2.07  | 2.96  | 2.91  | 2.58  | 2.40                   | 0.48        |
| 125               | 11.38       | 12.33 | 15.82 | 15.04 | 12.53 | 13.43 | 13.42                  | 1.70        |
| 130               | 16.21       | 16.32 | 23.24 | 21.23 | 17.19 | 20.33 | 19.09                  | 2.93        |
| 140               | 23.38       | 22.85 | 31.42 | 28.55 | 28.17 | 31.04 | 27.57                  | 3.69        |
| 150               | 28.27       | 27.50 | 38.84 | 34.58 | 37.27 | 38.87 | 34.22                  | 5.16        |
| 180               | 42.62       | 37.53 | 51.74 | 45.78 | 49.55 | 54.04 | 46.88                  | 6.14        |
| 240               | 54.10       | 49.34 | 63.68 | 57.86 | 65.36 | 63.19 | 58.92                  | 6.30        |
| 300               | 62.39       | 56.61 | 71.40 | 66.06 | 76.90 | 73.78 | 67.86                  | 7.60        |
| 360               | 69.60       | 62.35 | 78.81 | 72.75 | 85.17 | 79.97 | 74.78                  | 8.20        |
| 420               | 72.00       | 66.77 | 81.18 | 75.89 | 87.17 | 83.77 | 77.80                  | 7.67        |
| 480               | 77.42       | 72.28 | 86.92 | 79.84 | 92.21 | 89.13 | 82.97                  | 7.67        |
| 540               | 82.53       | 74.27 | 86.56 | 84.12 | 93.54 | 92.50 | 85.59                  | 7.09        |
| 600               | 88.87       | 83.43 | 93.38 | 90.25 | 97.41 | 95.21 | 91.43                  | 5.02        |
| 660               | 93.70       | 90.73 | 96.27 | 93.49 | 98.85 | 97.43 | 95.08                  | 2.98        |
| 720               | 96.03       | 95.78 | 97.65 | 95.66 | 99.75 | 99.38 | 97.38                  | 1.85        |

Table 60. Dissolution of Diclofenac Sodium from 10:(2.5+0.02) Diclofenac:(EC+chitosan) Solid Dispersion Tablet Prepared According to Formulation X in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |       |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|-------|-------|-------|------------------------|-------------|
|                   | 1           | 2     | 3     | 4     | 5     | 6     |                        |             |
| 30                | 0.43        | 1.33  | 1.33  | 0.84  | 0.39  | 1.07  | 0.88                   | 0.45        |
| 60                | 0.87        | 1.70  | 1.99  | 1.77  | 0.62  | 2.07  | 1.50                   | 0.61        |
| 90                | 1.68        | 2.21  | 2.88  | 1.69  | 1.33  | 1.36  | 1.86                   | 0.59        |
| 120               | 1.71        | 2.77  | 2.77  | 2.10  | 1.66  | 1.96  | 2.16                   | 0.50        |
| 125               | 10.02       | 16.39 | 16.85 | 13.40 | 13.87 | 10.18 | 13.45                  | 2.93        |
| 130               | 14.54       | 23.14 | 24.07 | 19.68 | 18.45 | 15.03 | 19.15                  | 3.98        |
| 140               | 20.85       | 31.16 | 32.30 | 27.89 | 26.03 | 21.28 | 26.59                  | 4.83        |
| 150               | 25.74       | 36.51 | 40.16 | 33.43 | 33.51 | 25.80 | 32.53                  | 5.78        |
| 180               | 36.66       | 47.70 | 52.57 | 46.39 | 45.09 | 37.00 | 44.24                  | 6.27        |
| 240               | 49.93       | 61.17 | 64.08 | 60.54 | 55.32 | 49.67 | 56.79                  | 6.10        |
| 300               | 63.40       | 68.15 | 71.28 | 67.99 | 63.10 | 58.66 | 65.43                  | 4.55        |
| 360               | 75.32       | 77.20 | 77.77 | 74.00 | 70.01 | 73.54 | 74.64                  | 2.82        |
| 420               | 83.21       | 77.17 | 82.48 | 79.77 | 75.45 | 81.73 | 79.97                  | 3.11        |
| 480               | 89.09       | 80.62 | 85.63 | 84.55 | 80.79 | 87.68 | 84.73                  | 3.49        |
| 540               | 93.48       | 84.28 | 89.88 | 90.89 | 83.31 | 91.33 | 88.86                  | 4.11        |
| 600               | 96.45       | 88.66 | 95.00 | 94.63 | 87.28 | 96.81 | 93.14                  | 4.11        |
| 660               | 98.50       | 89.70 | 96.60 | 97.20 | 89.92 | 97.61 | 94.92                  | 4.01        |
| 720               | 99.92       | 91.23 | 97.94 | 99.40 | 92.53 | 98.68 | 96.62                  | 3.75        |

Table 61. Dissolution of Diclofenac Sodium from 10:(2.5+0.02) Diclofenac:(EC+chitosan) Solid Dispersion Tablet Prepared According to Formulation XI in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |       |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|-------|-------|-------|------------------------|-------------|
|                   | 1           | 2     | 3     | 4     | 5     | 6     |                        |             |
| 30                | 0.06        | 0.14  | 0.14  | 0.46  | 0.94  | 0.65  | 0.40                   | 0.35        |
| 60                | 0.94        | 1.10  | 0.17  | 0.64  | 2.02  | 1.26  | 1.02                   | 0.62        |
| 90                | 1.01        | 1.57  | 0.57  | 1.15  | 2.06  | 2.28  | 1.44                   | 0.65        |
| 120               | 1.74        | 1.71  | 1.65  | 2.04  | 2.87  | 2.22  | 2.04                   | 0.46        |
| 125               | 12.38       | 9.71  | 12.74 | 10.24 | 13.47 | 11.23 | 11.63                  | 1.48        |
| 130               | 16.15       | 13.91 | 16.51 | 15.44 | 18.56 | 16.22 | 16.13                  | 1.51        |
| 140               | 21.52       | 20.50 | 20.70 | 20.98 | 25.02 | 20.67 | 21.57                  | 1.73        |
| 150               | 25.42       | 24.93 | 24.36 | 24.24 | 29.75 | 25.12 | 25.64                  | 2.06        |
| 180               | 31.29       | 32.33 | 31.07 | 31.29 | 37.23 | 32.27 | 32.58                  | 2.34        |
| 240               | 36.77       | 40.41 | 39.09 | 39.16 | 48.60 | 41.90 | 40.99                  | 4.09        |
| 300               | 43.78       | 46.65 | 47.99 | 46.86 | 56.75 | 48.85 | 48.48                  | 4.40        |
| 360               | 50.27       | 53.85 | 57.11 | 58.80 | 62.97 | 64.40 | 57.90                  | 5.37        |
| 420               | 56.63       | 66.13 | 64.43 | 64.12 | 67.23 | 76.94 | 65.91                  | 6.56        |
| 480               | 63.85       | 73.11 | 70.01 | 69.26 | 70.07 | 79.20 | 70.92                  | 5.05        |
| 540               | 72.57       | 77.28 | 78.87 | 74.27 | 77.01 | 85.19 | 77.53                  | 4.38        |
| 600               | 78.17       | 86.65 | 85.11 | 79.54 | 83.79 | 89.90 | 83.86                  | 4.40        |
| 660               | 83.02       | 88.37 | 88.42 | 82.70 | 86.67 | 91.05 | 86.71                  | 3.29        |
| 720               | 93.32       | 91.57 | 92.92 | 84.69 | 88.30 | 92.67 | 90.58                  | 3.41        |

Table 62. Dissolution of Diclofenac Sodium from 10:(2.5+0.02) Diclofenac:(EC+chitosan) Solid Dispersion Tablet Prepared According to Formulation XII in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |       |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|-------|-------|-------|------------------------|-------------|
|                   | 1           | 2     | 3     | 4     | 5     | 6     |                        |             |
| 30                | 0.43        | 0.86  | 0.10  | 0     | 0.17  | 0.10  | 0.28                   | 0.32        |
| 60                | 0.54        | 1.26  | 0.32  | 0.03  | 0     | 0.18  | 0.39                   | 0.47        |
| 90                | 1.27        | 1.48  | 0.47  | 0     | 0     | 0.10  | 0.55                   | 0.66        |
| 120               | 1.53        | 1.96  | 0.61  | 0.28  | 0     | 0.95  | 0.89                   | 0.75        |
| 125               | 11.96       | 10.47 | 6.79  | 8.39  | 5.19  | 10.11 | 8.82                   | 2.52        |
| 130               | 17.85       | 14.54 | 8.81  | 11.52 | 8.82  | 14.44 | 12.66                  | 3.59        |
| 140               | 25.10       | 20.05 | 13.81 | 16.47 | 12.92 | 19.33 | 17.95                  | 4.52        |
| 150               | 33.04       | 24.30 | 19.17 | 21.74 | 17.90 | 24.76 | 23.49                  | 5.41        |
| 180               | 44.15       | 31.91 | 29.22 | 30.76 | 27.81 | 36.10 | 33.33                  | 6.01        |
| 240               | 56.83       | 45.22 | 41.21 | 47.22 | 39.75 | 57.52 | 47.96                  | 7.63        |
| 300               | 61.56       | 59.01 | 48.11 | 58.49 | 48.90 | 64.51 | 56.76                  | 6.75        |
| 360               | 65.60       | 66.62 | 63.19 | 65.76 | 59.19 | 76.49 | 66.14                  | 5.74        |
| 420               | 70.00       | 72.56 | 69.22 | 70.29 | 67.53 | 78.74 | 71.39                  | 3.95        |
| 480               | 75.19       | 77.31 | 77.38 | 76.33 | 75.57 | 87.07 | 78.14                  | 4.46        |
| 540               | 77.87       | 82.86 | 82.24 | 80.85 | 80.92 | 90.88 | 82.60                  | 4.40        |
| 600               | 82.24       | 87.54 | 88.04 | 82.07 | 84.82 | 94.42 | 86.52                  | 4.62        |
| 660               | 88.69       | 89.56 | 93.55 | 85.56 | 89.76 | 96.86 | 90.66                  | 3.97        |
| 720               | 91.63       | 91.27 | 95.07 | 88.21 | 91.83 | 97.92 | 92.66                  | 3.38        |

Table 63. Dissolution of Diclofenac Sodium from 10:(2.5+0.02) Diclofenac:(EC+chitosan) Solid Dispersion Tablet Prepared According to Formulation XIII in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |        |        |        |        |        | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|--------|--------|--------|--------|--------|------------------------|-------------|
|                   | 1           | 2      | 3      | 4      | 5      | 6      |                        |             |
| 30                | 0.37        | 0.81   | 2.97   | 3.42   | 0.87   | 0.76   | 1.53                   | 1.31        |
| 60                | 0.67        | 1.70   | 2.56   | 2.76   | 1.35   | 1.93   | 1.83                   | 0.77        |
| 90                | 1.39        | 2.16   | 2.89   | 3.27   | 2.49   | 2.30   | 2.42                   | 0.65        |
| 120               | 1.39        | 2.48   | 3.15   | 3.38   | 2.60   | 2.26   | 2.51                   | 0.71        |
| 125               | 11.12       | 16.98  | 19.77  | 20.00  | 16.17  | 14.27  | 16.39                  | 3.38        |
| 130               | 18.57       | 23.59  | 24.21  | 27.59  | 21.74  | 19.92  | 22.60                  | 3.24        |
| 140               | 27.72       | 31.93  | 31.65  | 38.16  | 30.44  | 27.24  | 31.19                  | 3.94        |
| 150               | 33.12       | 39.63  | 40.81  | 45.94  | 36.10  | 32.52  | 38.02                  | 5.12        |
| 180               | 52.15       | 55.44  | 56.26  | 61.70  | 47.26  | 41.99  | 52.47                  | 7.01        |
| 240               | 70.51       | 73.69  | 70.16  | 76.17  | 64.57  | 61.22  | 69.39                  | 5.59        |
| 300               | 81.37       | 86.07  | 84.86  | 86.58  | 70.71  | 69.74  | 79.89                  | 7.71        |
| 360               | 85.51       | 91.74  | 90.39  | 90.87  | 78.18  | 80.50  | 86.20                  | 5.79        |
| 420               | 88.21       | 92.13  | 93.86  | 90.47  | 82.86  | 86.67  | 89.03                  | 3.98        |
| 480               | 93.85       | 95.14  | 97.51  | 93.63  | 90.07  | 90.27  | 93.41                  | 2.87        |
| 540               | 97.78       | 99.57  | 96.00  | 96.76  | 94.04  | 96.05  | 96.70                  | 1.87        |
| 600               | 100.44      | 103.03 | 101.19 | 101.01 | 100.30 | 99.84  | 100.97                 | 1.12        |
| 660               | 101.43      | 103.51 | 101.09 | 100.78 | 101.39 | 100.90 | 101.52                 | 1.01        |
| 720               | 101.51      | 103.96 | 102.06 | 101.41 | 102.29 | 102.05 | 102.21                 | 0.92        |

Table 64. Dissolution of Diclofenac Sodium from 10:(2.5+0.02) Diclofenac:(EC+chitosan) Solid Dispersion Tablet Prepared According to Formulation XIV in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |       |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|-------|-------|-------|------------------------|-------------|
|                   | 1           | 2     | 3     | 4     | 5     | 6     |                        |             |
| 30                | 0           | 0.35  | 0.47  | 0     | 0.25  | 0.51  | 0.26                   | 0.22        |
| 60                | 0.36        | 0.50  | 0.14  | 0.29  | 0.39  | 0.36  | 0.34                   | 0.12        |
| 90                | 1.21        | 0.68  | 0.84  | 0.88  | 1.15  | 0.57  | 0.89                   | 0.25        |
| 120               | 0.99        | 1.00  | 1.39  | 0.95  | 0.86  | 0.57  | 0.96                   | 0.26        |
| 125               | 7.06        | 4.89  | 6.60  | 6.53  | 5.23  | 6.13  | 6.07                   | 0.85        |
| 130               | 11.15       | 7.04  | 9.87  | 9.99  | 7.46  | 7.70  | 8.87                   | 1.68        |
| 140               | 16.33       | 11.11 | 13.83 | 15.90 | 11.49 | 11.06 | 13.29                  | 2.42        |
| 150               | 19.98       | 14.26 | 16.45 | 19.33 | 14.60 | 14.06 | 16.45                  | 2.63        |
| 180               | 27.82       | 21.93 | 23.00 | 26.03 | 23.32 | 22.27 | 24.06                  | 2.34        |
| 240               | 37.53       | 32.83 | 32.38 | 35.58 | 34.03 | 31.11 | 33.91                  | 2.33        |
| 300               | 44.77       | 41.12 | 38.77 | 42.19 | 42.00 | 37.97 | 41.14                  | 2.48        |
| 360               | 50.51       | 46.97 | 49.73 | 49.84 | 48.22 | 42.44 | 47.95                  | 2.99        |
| 420               | 54.73       | 51.36 | 56.06 | 53.40 | 52.45 | 46.18 | 52.36                  | 3.45        |
| 480               | 58.95       | 55.52 | 62.55 | 58.89 | 56.88 | 50.28 | 57.18                  | 4.13        |
| 540               | 63.37       | 59.65 | 67.85 | 61.44 | 62.41 | 54.26 | 61.50                  | 4.48        |
| 600               | 66.79       | 64.21 | 71.79 | 65.43 | 66.58 | 56.78 | 65.26                  | 4.89        |
| 660               | 70.02       | 67.65 | 75.47 | 69.22 | 70.25 | 59.04 | 68.61                  | 5.38        |
| 720               | 73.14       | 71.62 | 79.04 | 72.68 | 73.66 | 60.94 | 71.85                  | 5.94        |

Table 65. Dissolution of Diclofenac Sodium from 10:(2.5+0.02) Diclofenac:(EC+chitosan) Solid Dispersion Tablet Prepared According to Formulation XV in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |       |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|-------|-------|-------|------------------------|-------------|
|                   | 1           | 2     | 3     | 4     | 5     | 6     |                        |             |
| 30                | 1.27        | 1.84  | 2.86  | 1.62  | 0.69  | 0.32  | 1.43                   | 0.90        |
| 60                | 2.00        | 2.54  | 2.97  | 1.62  | 0.98  | 0.32  | 1.74                   | 0.98        |
| 90                | 2.80        | 2.80  | 3.78  | 2.72  | 2.45  | 0.51  | 2.51                   | 1.08        |
| 120               | 4.19        | 3.54  | 4.19  | 3.91  | 2.49  | 2.54  | 3.48                   | 0.78        |
| 125               | 25.96       | 17.84 | 22.74 | 16.80 | 15.72 | 20.61 | 19.95                  | 3.91        |
| 130               | 33.56       | 24.16 | 31.65 | 22.87 | 25.93 | 26.77 | 27.49                  | 4.23        |
| 140               | 42.20       | 32.56 | 40.66 | 32.26 | 32.26 | 37.50 | 36.24                  | 4.51        |
| 150               | 49.22       | 39.19 | 49.10 | 39.62 | 39.05 | 44.73 | 43.49                  | 4.88        |
| 180               | 60.76       | 51.64 | 63.34 | 51.04 | 49.13 | 56.59 | 55.42                  | 5.76        |
| 240               | 68.58       | 64.03 | 76.03 | 64.03 | 57.58 | 66.02 | 66.05                  | 6.10        |
| 300               | 75.61       | 70.49 | 82.77 | 73.19 | 63.31 | 72.59 | 72.99                  | 6.37        |
| 360               | 81.96       | 76.85 | 85.50 | 78.29 | 67.42 | 75.89 | 77.61                  | 6.11        |
| 420               | 83.56       | 80.85 | 88.38 | 81.52 | 68.87 | 76.75 | 79.99                  | 6.64        |
| 480               | 87.70       | 85.18 | 93.23 | 86.65 | 71.09 | 83.64 | 84.58                  | 7.38        |
| 540               | 90.35       | 90.18 | 96.12 | 91.54 | 79.01 | 88.24 | 89.24                  | 5.66        |
| 600               | 93.14       | 92.57 | 96.65 | 93.04 | 82.73 | 92.14 | 91.71                  | 4.69        |
| 660               | 94.35       | 94.74 | 97.44 | 95.11 | 85.97 | 93.24 | 93.48                  | 3.93        |
| 720               | 95.81       | 96.54 | 98.04 | 96.27 | 89.22 | 94.50 | 95.06                  | 3.00        |

Table 66. Dissolution of Diclofenac Sodium from 10:(2.5+0.02) Diclofenac:(EC+chitosan) Solid Dispersion Tablet Prepared According to Formulation XVI in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |        |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|--------|-------|-------|------------------------|-------------|
|                   | 1           | 2     | 3     | 4      | 5     | 6     |                        |             |
| 30                | 0.25        | 0.29  | 1.45  | 1.25   | 0.73  | 1.32  | 0.88                   | 0.53        |
| 60                | 0.58        | 0.14  | 1.78  | 2.13   | 0.77  | 1.98  | 1.23                   | 0.84        |
| 90                | 1.24        | 0.73  | 2.70  | 2.47   | 1.17  | 2.43  | 1.79                   | 0.84        |
| 120               | 1.09        | 0.98  | 2.88  | 2.91   | 1.14  | 2.94  | 1.99                   | 1.01        |
| 125               | 6.81        | 8.61  | 16.78 | 17.50  | 6.01  | 11.17 | 11.15                  | 4.97        |
| 130               | 10.42       | 14.18 | 24.06 | 22.50  | 9.23  | 16.86 | 16.21                  | 6.13        |
| 140               | 20.15       | 21.67 | 31.72 | 31.65  | 17.12 | 25.91 | 24.70                  | 6.11        |
| 150               | 29.96       | 26.78 | 38.39 | 36.78  | 21.55 | 31.20 | 30.78                  | 6.26        |
| 180               | 49.40       | 39.44 | 52.61 | 50.07  | 29.30 | 43.71 | 44.09                  | 8.68        |
| 240               | 61.66       | 53.34 | 67.98 | 67.98  | 46.75 | 57.23 | 59.16                  | 8.41        |
| 300               | 71.27       | 59.61 | 75.57 | 75.51  | 58.23 | 67.91 | 68.02                  | 7.62        |
| 360               | 77.52       | 64.22 | 80.28 | 80.47  | 69.26 | 75.23 | 74.50                  | 6.51        |
| 420               | 80.49       | 67.40 | 87.01 | 84.90  | 70.52 | 80.26 | 78.43                  | 7.84        |
| 480               | 83.48       | 70.78 | 88.63 | 87.93  | 74.84 | 85.15 | 81.80                  | 7.32        |
| 540               | 86.90       | 74.16 | 92.10 | 89.96  | 79.99 | 88.34 | 85.24                  | 6.81        |
| 600               | 89.25       | 77.48 | 96.98 | 94.06  | 87.48 | 93.24 | 89.75                  | 6.91        |
| 660               | 91.55       | 85.94 | 98.56 | 98.12  | 89.24 | 98.36 | 93.63                  | 5.47        |
| 720               | 93.51       | 88.52 | 99.75 | 100.59 | 93.73 | 99.83 | 95.99                  | 4.83        |

Table 67. Dissolution of Diclofenac Sodium from 10:(2.5+0.02) Diclofenac:(EC+chitosan) Solid Dispersion Tablet Prepared According to Formulation XVII in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |       |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|-------|-------|-------|------------------------|-------------|
|                   | 1           | 2     | 3     | 4     | 5     | 6     |                        |             |
| 30                | 0           | 0     | 0     | 0     | 0.75  | 0.71  | 0.24                   | 0.38        |
| 60                | 0.66        | 0.29  | 0.87  | 0     | 1.19  | 1.28  | 0.72                   | 0.50        |
| 90                | 0.73        | 0.69  | 1.28  | 0.92  | 1.79  | 1.23  | 1.11                   | 0.42        |
| 120               | 1.47        | 0.76  | 1.39  | 1.03  | 2.60  | 1.08  | 1.39                   | 0.65        |
| 125               | 11.10       | 7.46  | 9.21  | 6.67  | 15.34 | 10.25 | 10.01                  | 3.10        |
| 130               | 16.09       | 10.47 | 13.66 | 9.66  | 20.25 | 14.88 | 14.17                  | 3.88        |
| 140               | 22.34       | 14.90 | 19.24 | 15.08 | 29.47 | 24.55 | 20.93                  | 5.68        |
| 150               | 28.83       | 18.27 | 24.41 | 20.21 | 34.48 | 32.81 | 26.50                  | 6.64        |
| 180               | 38.87       | 26.71 | 33.13 | 33.45 | 45.35 | 47.85 | 37.56                  | 8.03        |
| 240               | 46.21       | 45.82 | 42.47 | 46.05 | 59.14 | 60.50 | 50.03                  | 7.72        |
| 300               | 54.06       | 56.21 | 52.15 | 52.62 | 65.47 | 70.03 | 58.42                  | 7.50        |
| 360               | 59.25       | 63.39 | 58.52 | 59.36 | 70.34 | 75.96 | 64.47                  | 7.16        |
| 420               | 62.17       | 66.83 | 63.09 | 61.04 | 73.52 | 79.66 | 67.72                  | 7.40        |
| 480               | 68.72       | 71.09 | 66.11 | 65.52 | 77.13 | 83.03 | 71.93                  | 6.87        |
| 540               | 72.48       | 73.90 | 69.62 | 68.97 | 80.28 | 86.28 | 75.26                  | 6.75        |
| 600               | 80.23       | 78.63 | 72.30 | 72.59 | 83.75 | 88.81 | 79.39                  | 6.41        |
| 660               | 84.08       | 84.06 | 75.02 | 76.34 | 88.06 | 91.48 | 83.17                  | 6.44        |
| 720               | 88.19       | 87.03 | 77.90 | 81.49 | 91.65 | 91.88 | 86.36                  | 5.61        |

Table 68. Dissolution of Diclofenac Sodium from 10:(2.5+0.02) Diclofenac:(EC+chitosan) Solid Dispersion Tablet Prepared According to Formulation XVIII in 0.1 N HCl for the First Two Hours and in Phosphate Buffer pH 6.8 for the Following Ten Hours.

| Time<br>(minutes) | % dissolved |       |       |       |       |       | Average<br>% dissolved | S.D.<br>(%) |
|-------------------|-------------|-------|-------|-------|-------|-------|------------------------|-------------|
|                   | 1           | 2     | 3     | 4     | 5     | 6     |                        |             |
| 30                | 0.38        | 0.69  | 0.77  | 0.57  | 0.03  | 0.07  | 0.42                   | 0.29        |
| 60                | 0.61        | 1.07  | 0.85  | 0.69  | 0.56  | 0.07  | 0.64                   | 0.31        |
| 90                | 0.38        | 1.27  | 0.81  | 1.08  | 1.00  | 0.23  | 0.79                   | 0.37        |
| 120               | 0.69        | 1.62  | 1.00  | 1.27  | 1.08  | 0.43  | 1.01                   | 0.38        |
| 125               | 4.15        | 9.37  | 6.55  | 8.38  | 11.61 | 5.05  | 7.52                   | 2.56        |
| 130               | 6.57        | 12.51 | 9.73  | 11.63 | 15.06 | 7.48  | 10.50                  | 2.92        |
| 140               | 11.02       | 18.48 | 15.04 | 18.87 | 20.26 | 13.50 | 16.19                  | 3.27        |
| 150               | 14.14       | 22.35 | 18.54 | 23.10 | 25.42 | 18.07 | 20.27                  | 3.75        |
| 180               | 21.81       | 29.19 | 25.54 | 32.23 | 34.17 | 30.27 | 28.87                  | 4.13        |
| 240               | 33.44       | 38.44 | 35.73 | 43.87 | 43.62 | 42.83 | 39.66                  | 4.06        |
| 300               | 42.17       | 46.47 | 43.68 | 51.46 | 48.12 | 50.36 | 47.04                  | 3.34        |
| 360               | 49.38       | 52.89 | 49.07 | 57.51 | 52.26 | 56.82 | 52.99                  | 3.26        |
| 420               | 55.55       | 57.01 | 54.12 | 62.12 | 56.95 | 62.06 | 57.97                  | 3.07        |
| 480               | 62.06       | 62.45 | 58.60 | 66.57 | 61.46 | 66.73 | 62.98                  | 2.88        |
| 540               | 66.97       | 66.64 | 63.36 | 70.87 | 65.49 | 72.19 | 67.59                  | 3.04        |
| 600               | 70.86       | 69.78 | 67.11 | 74.22 | 68.65 | 75.48 | 71.02                  | 2.96        |
| 660               | 73.98       | 72.15 | 70.89 | 76.46 | 71.19 | 78.47 | 73.86                  | 2.80        |
| 720               | 76.29       | 74.98 | 74.18 | 80.10 | 73.99 | 81.40 | 76.82                  | 2.90        |

Table 69. Hardness of Diclofenac Sodium Tablets Prepared According to Formulations I-XVIII.

| Formulation | Hardness (kp) |     |     |     |     | Average Hardness | S.D. (kp) |
|-------------|---------------|-----|-----|-----|-----|------------------|-----------|
|             | 1             | 2   | 3   | 4   | 5   |                  |           |
| I           | 2.9           | 2.6 | 2.5 | 2.9 | 3.4 | 2.86             | 0.35      |
| II          | 4.6           | 5.3 | 5   | 5   | 5.7 | 5.12             | 0.41      |
| III         | 3             | 3.4 | 4.2 | 2.7 | 3.5 | 3.36             | 0.57      |
| IV          | 5.5           | 6   | 5.9 | 5.4 | 6.2 | 5.80             | 0.34      |
| V           | 3.2           | 3.6 | 3.8 | 2.4 | 3.2 | 3.24             | 0.54      |
| VI          | 5.4           | 6.4 | 5.9 | 5.6 | 6.2 | 5.90             | 0.41      |
| VII         | 3             | 3.2 | 2.2 | 3.3 | 3.1 | 2.96             | 0.44      |
| VIII        | 6.8           | 6.1 | 5.4 | 7.3 | 5.2 | 6.16             | 0.90      |
| IX          | 6.9           | 5.8 | 7.4 | 5.4 | 6.5 | 6.40             | 0.81      |
| X           | 2.6           | 3.8 | 3.3 | 3.9 | 3.5 | 3.42             | 0.52      |
| XI          | 5.7           | 6.6 | 5.3 | 6.4 | 5   | 5.80             | 0.69      |
| XII         | 4.3           | 4.4 | 4.2 | 5.1 | 4.3 | 4.46             | 0.36      |
| XIII        | 4.3           | 5   | 4.5 | 4.8 | 4   | 4.52             | 0.40      |
| XIV         | 4.8           | 4.1 | 3.9 | 4.7 | 5.2 | 4.54             | 0.53      |
| XV          | 4.2           | 4.6 | 5.2 | 4.6 | 4.3 | 4.58             | 0.39      |
| XVI         | 5.1           | 4.9 | 5.4 | 5.1 | 4.7 | 5.04             | 0.26      |
| XVII        | 4.5           | 5.1 | 5.2 | 5.3 | 6.2 | 5.26             | 0.61      |
| XVIII       | 3.9           | 3.9 | 4.3 | 3.9 | 4.7 | 4.14             | 0.36      |

Table 70. Disintegration Time of Diclofenac Sodium Tablets Prepared According to Formulations I-XVIII

| Formulation | Time (minutes) |      |      |      |      |      | Average Time | (minutes) |
|-------------|----------------|------|------|------|------|------|--------------|-----------|
|             | 1              | 2    | 3    | 4    | 5    | 6    |              |           |
| I           | 1.17           | 1.83 | 1.43 | 1.57 | 1.78 | 2.20 | 1.66         | 0.36      |
| II          | 2.47           | 2.48 | 1.60 | 1.38 | 1.57 | 1.75 | 1.88         | 0.48      |
| III         | 1.78           | 2.12 | 1.55 | 1.25 | 1.12 | 1.32 | 1.52         | 0.38      |
| IV          | 1.25           | 1.20 | 1.75 | 1.52 | 2.28 | 2.38 | 1.73         | 0.51      |
| V           | 1.18           | 0.97 | 1.08 | 1.25 | 0.98 | 1.30 | 1.13         | 0.14      |
| VI          | 1.48           | 1.88 | 1.20 | 1.35 | 1.12 | 1.72 | 1.46         | 0.30      |
| VII         | 0.72           | 0.98 | 0.92 | 1.53 | 1.80 | 0.72 | 1.11         | 0.45      |
| VIII        | 1.32           | 2.85 | 1.62 | 1.68 | 1.78 | 1.57 | 1.80         | 0.54      |
| IX          | 1.15           | 1.38 | 1.55 | 1.58 | 1.57 | 1.18 | 1.40         | 0.20      |
| X           | 1.30           | 1.45 | 1.35 | 1.75 | 0.98 | 1.07 | 1.32         | 0.28      |
| XI          | 0.88           | 1.55 | 1.97 | 2.47 | 1.25 | 1.55 | 1.61         | 0.55      |
| XII         | 1.18           | 1.68 | 0.65 | 1.28 | 0.75 | 1.27 | 1.14         | 0.38      |
| XIII        | 0.77           | 0.98 | 1.50 | 1.78 | 0.72 | 0.92 | 1.11         | 0.43      |
| XIV         | 1.23           | 2.07 | 1.30 | 1.93 | 1.07 | 1.30 | 1.48         | 0.41      |
| XV          | 1.08           | 1.27 | 0.95 | 1.03 | 1.20 | 1.83 | 1.23         | 0.32      |
| XVI         | 1.23           | 1.78 | 0.70 | 0.95 | 1.33 | 1.93 | 1.32         | 0.47      |
| XVII        | 1.37           | 1.45 | 0.72 | 0.90 | 0.98 | 1.85 | 1.21         | 0.42      |
| XVIII       | 1.63           | 1.15 | 1.98 | 1.77 | 1.97 | 2.45 | 1.83         | 0.43      |

Table 71. Weight Variation of Diclofenac Sodium Tablets Prepared According to Formulations I-XVIII

| Tablet no. | Weight (mg) |       |       |       |       |       |       |       |       |
|------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|
|            | I           | II    | III   | IV    | V     | VI    | VII   | VIII  | IX    |
| 1          | 284.6       | 314.9 | 345.9 | 354.0 | 328.4 | 314.9 | 367.9 | 353.8 | 333.4 |
| 2          | 286.2       | 318.8 | 338.6 | 357.6 | 316.2 | 318.2 | 358.1 | 361.3 | 329.8 |
| 3          | 292.3       | 318.7 | 338.8 | 345.0 | 291.2 | 313.4 | 368.0 | 382.0 | 344.9 |
| 4          | 282.3       | 310.3 | 345.6 | 346.6 | 291.4 | 321.2 | 369.3 | 355.4 | 348.1 |
| 5          | 292.4       | 306.6 | 336.2 | 351.9 | 329.4 | 319.6 | 380.9 | 356.6 | 344.7 |
| 6          | 297.9       | 322.9 | 350.1 | 351.7 | 316.1 | 310.3 | 382.3 | 363.9 | 351.0 |
| 7          | 281.0       | 302.1 | 344.7 | 354.4 | 305.3 | 305.6 | 385.7 | 378.0 | 344.1 |
| 8          | 281.0       | 305.5 | 338.3 | 349.9 | 312.0 | 319.3 | 379.5 | 365.7 | 347.9 |
| 9          | 296.9       | 312.1 | 348.7 | 353.0 | 321.7 | 308.1 | 384.4 | 362.8 | 332.1 |
| 10         | 293.8       | 320.7 | 344.5 | 342.9 | 313.3 | 309.5 | 382.6 | 370.1 | 343.5 |
| 11         | 298.3       | 323.7 | 346.6 | 351.6 | 306.9 | 313.6 | 380.5 | 373.3 | 326.2 |
| 12         | 286.8       | 316.7 | 340.0 | 344.9 | 291.9 | 321.7 | 370.4 | 365.8 | 335.6 |
| 13         | 291.6       | 314.5 | 335.7 | 346.8 | 322.4 | 318.5 | 378.6 | 359.8 | 343.9 |
| 14         | 296.3       | 316.4 | 341.7 | 345.9 | 335.8 | 317.8 | 365.5 | 380.8 | 336.7 |
| 15         | 279.5       | 312.1 | 357.3 | 351.0 | 316.2 | 309.1 | 374.8 | 375.6 | 340.5 |
| 16         | 285.3       | 317.5 | 359.1 | 343.0 | 324.8 | 312.3 | 380.9 | 382.1 | 351.9 |
| 17         | 292.3       | 309.6 | 360.4 | 351.0 | 308.7 | 320.2 | 384.7 | 370.5 | 326.0 |
| 18         | 283.6       | 319.7 | 353.5 | 355.6 | 315.2 | 308.6 | 369.7 | 359.7 | 321.3 |
| 19         | 286.6       | 311.6 | 336.4 | 344.9 | 300.1 | 320.3 | 371.3 | 372.9 | 320.3 |
| 20         | 283.9       | 320.0 | 345.2 | 344.2 | 306.4 | 324.5 | 379.9 | 373.5 | 349.1 |
| Av. Wt.    | 288.6       | 314.7 | 345.4 | 349.3 | 312.7 | 315.3 | 375.8 | 368.2 | 338.6 |
| S.D.       | 6.12        | 5.90  | 7.60  | 4.49  | 12.72 | 5.49  | 7.69  | 8.99  | 9.96  |
| %Variation | 2.12        | 1.88  | 2.20  | 1.29  | 4.07  | 1.74  | 2.05  | 2.44  | 2.94  |

| Tablet no. | Weight (mg) |       |       |       |       |       |       |       |       |
|------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|
|            | X           | XI    | XII   | XIII  | XIV   | XV    | XVI   | XVII  | XVIII |
| 1          | 330.3       | 370.5 | 301.0 | 318.4 | 335.4 | 332.4 | 323.6 | 336.6 | 341.2 |
| 2          | 320.3       | 354.9 | 306.8 | 316.3 | 345.5 | 340.2 | 344.3 | 324.2 | 339.8 |
| 3          | 334.2       | 379.2 | 308.2 | 336.3 | 336.9 | 316.7 | 322.1 | 337.3 | 340.8 |
| 4          | 348.3       | 370.4 | 314.4 | 312.5 | 341.1 | 330.4 | 321.5 | 323.2 | 342.2 |
| 5          | 316.8       | 381.1 | 304.0 | 312.7 | 334.7 | 322.3 | 333.3 | 331.8 | 343.3 |
| 6          | 342.9       | 374.5 | 300.6 | 331.2 | 339.3 | 329.8 | 333.9 | 327.1 | 350.8 |
| 7          | 329.8       | 362.0 | 310.5 | 338.9 | 324.9 | 319.6 | 330.6 | 338.8 | 326.8 |
| 8          | 338.1       | 373.2 | 313.6 | 330.2 | 342.7 | 321.6 | 318.7 | 335.8 | 341.8 |
| 9          | 330.0       | 370.9 | 303.5 | 337.8 | 338.0 | 320.9 | 330.5 | 344.1 | 342.8 |
| 10         | 337.9       | 384.5 | 304.1 | 333.6 | 336.3 | 321.9 | 329.6 | 345.2 | 338.7 |
| 11         | 338.5       | 379.3 | 307.2 | 351.8 | 335.8 | 325.2 | 312.9 | 346.1 | 347.8 |
| 12         | 328.2       | 373.8 | 305.0 | 319.0 | 339.7 | 318.8 | 345.9 | 337.7 | 347.5 |
| 13         | 338.7       | 374.0 | 313.8 | 348.7 | 342.6 | 323.4 | 316.3 | 333.5 | 338.3 |
| 14         | 324.0       | 369.3 | 305.2 | 351.6 | 344.9 | 331.2 | 344.1 | 331.6 | 344.1 |
| 15         | 327.7       | 384.9 | 303.2 | 317.5 | 343.2 | 324.4 | 327.1 | 331.7 | 337.3 |
| 16         | 329.1       | 359.2 | 302.6 | 351.2 | 328.6 | 327.0 | 329.1 | 322.1 | 341.9 |
| 17         | 328.6       | 366.3 | 307.2 | 316.4 | 325.0 | 335.1 | 335.6 | 337.6 | 344.6 |
| 18         | 343.7       | 363.0 | 311.9 | 313.2 | 339.2 | 332.4 | 327.5 | 347.9 | 334.3 |
| 19         | 326.5       | 378.2 | 308.0 | 319.2 | 347.5 | 327.1 | 315.1 | 317.6 | 338.5 |
| 20         | 323.0       | 372.1 | 317.1 | 323.5 | 317.8 | 323.8 | 342.9 | 334.4 | 339.1 |
| Av. Wt.    | 331.8       | 372.1 | 307.4 | 329.0 | 337.0 | 326.2 | 329.2 | 334.2 | 341.1 |
| S.D.       | 8.25        | 8.10  | 4.76  | 14.04 | 7.68  | 6.06  | 9.97  | 8.35  | 5.14  |
| %Variation | 2.49        | 2.18  | 1.55  | 4.27  | 2.28  | 1.86  | 3.03  | 2.50  | 1.51  |



## VITA

Mr. Pienkit Dangprasirt was born on March 17, 1958. He got his degree in Bachelor of Science in Biochemistry in 1980 from Department of Biochemistry, Faculty of Science, Chulalongkorn University. In 1984 he earned his second degree in Bachelor of Science in Pharmacy from School of Pharmacy, Oregon State University. He also got his degree in Master of Science in Pharmacy in 1986 from Department of Manufacturing Pharmacy, Faculty of Pharmaceutical Sciences, Chulalongkorn University.