**Table 1** Average particle diameters (nm) of emulsions and microemulsions formed upon dilution of mixtures the individual lipids and the surfactant with water in the range of 70 to 99% w/w. Each value depicts the average of two determinations.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Lipid used and % water** | | **Lipid/Surfactant ratio (w/w)** | | | | | | | | | |
| **90:10** | | **70:30** | | | **50:50** | **30:70** | | **10:90** | |
| **PG monocaprylate** | | | | | | | | | | | |
| **70** | 2632  (1014,4250) | | 706  (860,553) | | | 2276  (2476,2077) | | | 2562  (2315,2809) | | 49  (51,47) |
| **80** | 1159  (706,1612) | | 411  (487,336) | | | 768  (1012,525) | | | 1300  (1359,1242) | | 13  (14,13) |
| **90** | 763  (438,1088) | | 272  (319,226) | | | 85  (128,43) | | | 370  (368,372) | | 12  (12,12) |
| **99** | 1354  (389,2319) | | 198  (228,168) | | | 60  (56,64) | | | 151  (151,152) | | 14  (14,14) |
| **PG dicaprylocaprate** | | | | | | | | | | | |
| **70** | 610  (506,714) | | | 572  (622,523) | | | 451  (418,484) | 50  (37,63) | | 45  (40,50) | |  |
| **80** | 494  (354.634) | | | 365  (448,282) | | | 172  (192,153) | 46  (40.53) | | 22  (28,16) | |  |
| **90** | 733  (494,972) | | | 289  (266,313) | | | 124  (117,131) | 36  (30,43) | | 16  (16,17) | |  |
| **99** | 2192  (1092,3292) | | | 220  (232,208) | | | 125  (87,65) | 37  (49,26) | | 16  (17.16) | |  |
| **Glycerol tricaprylocaprate** | | | | | | | | | | | |
| **70** | 1233  (564,1902) | | | | 1002  (465,1539) | | 374  (429,319) | 40  (35,45) | | 35  (32,38) | |
| **80** | 860  (558,1162) | | | | 521  (565,478) | | 170  (199,141) | 35  (22,48) | | 23  (18,28) | |
| **90** | 1099  (878,1320) | | | | 454  (377,532) | | 103  (117,89) | 60  (32.89) | | 22  (17,28) | |
| **99** | 4497  (3105,5889) | | | | 320  (311,329) | | 82  (75,89) | 65  (31,99) | | 17  (17,18) | |
|  | | | | | | | | | | | |

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**Table 2** Average particle diameters (nm) of emulsions and microemulsions formed upon dilution of combinations of mixed lipids and the surfactant with water in the range of 70 to 99% w/w. Each value depicts the average of two determinations, except where indicated, and the individual values are given in parentheses.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Lipid mixtures and % water** | | **Mixed lipid/Surfactant ratio (w/w)** | | | | | | |
| **90:10** | **70:30** | | | **50:50** | **30:70** | **10:90** |
| **PG monocaprylate + PG dicaprylocaprate (1:3 w/w)** | | | | | | | | |
| **70** | 452  (336,706,406,360)a | | | 395  (377,414) | | 218  (196,240) | 38  (25,51) | 22  (20,24) |  |
| **80** | 333  (322,345) | | | 214  (214,215) | | 68  (57,79) | 33  (33,34) | 13  (14,13) |  |
| **90** | 304  (222,386) | | | 142  (137,148) | | 41  (39,43) | 18  (19,18) | 13  (13,14) |  |
| **99** | 676  (255,1133,957,357) | | | 116  (112,121) | | 39  (38,40) | 21  (22,20) | 15  (14,16) |  |
| **PG monocaprylate + PG dicaprylocaprate (1:1 w/w)** | | | | | | | | |
| **70** | 701  (736,666) | | | | 368  (386,351) | 61  (89,34) | 32  (28,36) | 38  (55,22) |  |
| **80** | 496  (517,476) | | | | 175  (174,175) | 31  (29,34) | 45  (41,49) | 13  (14,12) |  |
| **90** | 568  (355,972,538,405)a | | | | 94  (108,80) | 26  (25,28) | 20  (19,21) | 13  (13,13) |  |
| **99** | 844  (530,1032,1290,543)a | | | | 88  (92,84) | 28  (27,30) | 21  (21,21) | 14  (14,15) |  |
| **PG monocaprylate + Glycerol tricaprylocaprate (1:3 w/w)** | | | | | | | | |
| **70** | 329  (371,287) | | | | 276  (261,291) | 223  (200,246) | 45  (39,51) | 38  (35,41) |  |
| **80** | 282  (324,241) | | | | 180  (149,212) | 71  (67,76) | 26  (25,27) | 12  (10,14) |  |
| **90** | 270  (317,224) | | | | 134  (105,164) | 42  (42,43) | 20  (21,20) | 19  (27,12) |  |
| **99** | 924  (429,1491,527,1247)a | | | | 127  (93,162) | 48  (41,55) | 21  (22,20) | 15  (18,13) |  |
| **PG monocaprylate + Glycerol tricaprylocaprate (1:1 w/w)** | | | | | | | | |
| **70** | 560  (310,514,959,456)a | | | 287  (341,234) | | 74  (80,68) | 50  (70,30) | 75  (85,65) |  |
| **80** | 309  (253,366) | | | 123  (148,98) | | 28  (29,28) | 18  (18,18) | 14  (14,14) |  |
| **90** | 262  (232,293) | | | 94  (101,87) | | 27  (28,26) | 16  (16,17) | 13  (13,14) |  |
| **99** | 583  (470,696) | | | 79  (81,77) | | 29  (28,30) | 18  (18,19) | 14  (15,14) |  |

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aParticle sizes of emulsions formed at 9:1w/w lipid/surfactant rations were highly variable. For several mixtures, two additional particle size determinations were performed by preparing new samples.

**Table 3** Solubility of danazol in individual lipids, lipid mixtures and surfactant (± s.d., n=3).

|  |  |
| --- | --- |
| **Lipid** | **Solubility of Danazol**  **(mg/g)** |
| Glycerol tricaprylocaprate | 7 ± 1 |
| Propylene glycol (PG) dicaprylocaprate | 9 ± 1 |
| PG monocaprylate | 31 ± 1 |
| PG monocaprylate + Glycerol tricaprylocaprate (1:3 w/w) | 12 ± 1 |
| PG monocaprylate + PG dicaprylocaprate (1:3 w/w) | 14 ± 1 |
| PG monocaprylate + Glycerol tricaprylocaprate (1:1 w/w) | 18 ± 1 |
| PG monocaprylate + PG dicaprylocaprate (1:1 w/w) | 19 ± 1 |
| Cremophor EL (surfactant) | 26 ± 1 |

**Table 4** Solubility of danazol at different ratios of lipid (or lipid mixtures) to surfactant (n=2).

|  |  |
| --- | --- |
| **Lipid : Surfactant**  **Ratio** | **Solubility(mg/g)** |
| **Glycerol tricaprylocaprate: Cremophor EL** | |
| 7:3 | 14 (13,14)\* |
| 1:1 | 17 (17,17) |
| 3:7 | 19 (18,19) |
| **PG dicaprylocaprate : Cremophor EL** | |
| 7:3 | 15 (15,15) |
| 1:1 | 19 (18,19) |
| 3:7 | 22 (22,21) |
| **PG monocaprylate : Cremophor EL** | |
| 7:3 | 28 (28,28) |
| 1:1 | 28 (28,27) |
| 3:7 | 27 (27,27) |
| **PG monocaprylate + PG dicaprylocaprate (1:3) : Cremophor EL** | |
| 7:3 | 19 (18,19) |
| 1:1 | 21 (21,21) |
| 3:7 | 23 (23,23) |
| **PG monocaprylate + PG dicaprylocaprate (1:1) : Cremophor EL** | |
| 7:3 | 22 (21,22) |
| 1:1 | 24 (24,24) |
| 3:7 | 25 (25,25) |
| **PG monocaprylate +** **Glycerol tricaprylocaprate (1:3) : Cremophor EL** | |
| 7:3 | 17 (16,17) |
| 1:1 | 20 (20,20) |
| 3:7 | 23 (23,23) |
| **PG monocaprylate + Glycerol tricaprylocaprate (1:1) : Cremophor EL** | |
| 7:3 | 21 (21,20) |
| 1:1 | 22 (22,22) |
| 3:7 | 24 (24,24) |

\* Individual values are given in parentheses

**Table 5** Particle size following dispersion of 1:1 lipid-surfactant mixtures without (control) and with danazol present (preconcentrate) (n=3).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Lipid used in preconcentrate** | | **Particle size (nm)** | | | |
| **Control**  **(without danazol)** | | **Preconcentrate**  **(with danazol)** | |
| **15 min** | **2 h** | **15 min** | **2 h** |
| 1 | PG monocaprylate | 85 | 115 | 83 | 104 |
| 2 | PG dicaprylocaprate | 92 | 91 | 87 | 85 |
| 3 | PG monocaprylate + PG dicaprylocaprate, 1:3 | 34 | 38 | 36 | 34 |
| 4 | PG monocaprylate + PG dicaprylocaprate, 1:1 | 42 | 43 | 42 | 55 |
| 5 | Glyceryl tricaprylocaprate | 135 | 137 | 123 | 121 |
| 6 | PG monocaprylate + Glyceryl tricaprylocaprate, 1:3 | 38 | 37 | 38 | 36 |
| 7 | PG monocaprylate + Glyceryl tricaprylocaprate, 1:1 | 32 | 30 | 31 | 32 |