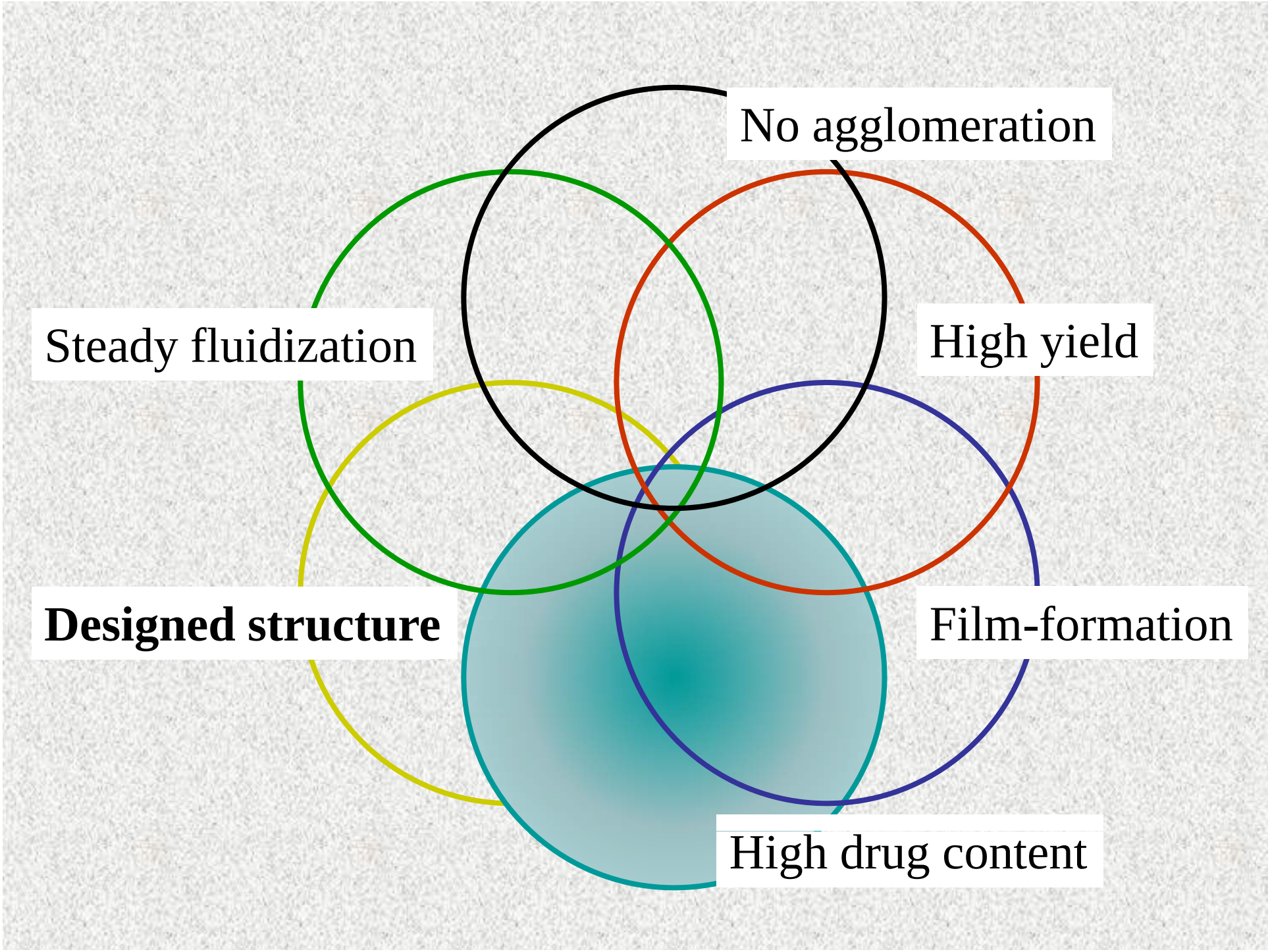

No agglomeration
Steady fluidization
High yield
Designed structure
Film-formation
High drug content

Comparison on the Amount of Coating Material Required to Apply Coating 10 μm Thick onto Particles of Various Sizes

Particle diameter (mm)	Number of particles per gram	Surface area per gram	Coated diameter (mm)	Coating applied (%)
4.000	23	1,154	4.020	1.2
2.000	184	2,308	2.020	2.3
1.000	1,469	4,615	1.020	4.7
0.500	11,753	9,231	0.520	9.6
0.250	94,024	18,462	0.270	20.0
0.125	752,191	36,923	0.145	43.1
0.074	3,625,458	62,370	0.094	80.7
0.044	17,246,461	104,895	0.064	159.8
0.022	137,971,690	209,790	0.042	458.3
0.011	1,103,773,517	419,580	0.031	1644.8

Density of particle: 1.30 g/cm^3, Density of coating material: 1.00 g/cm^3.

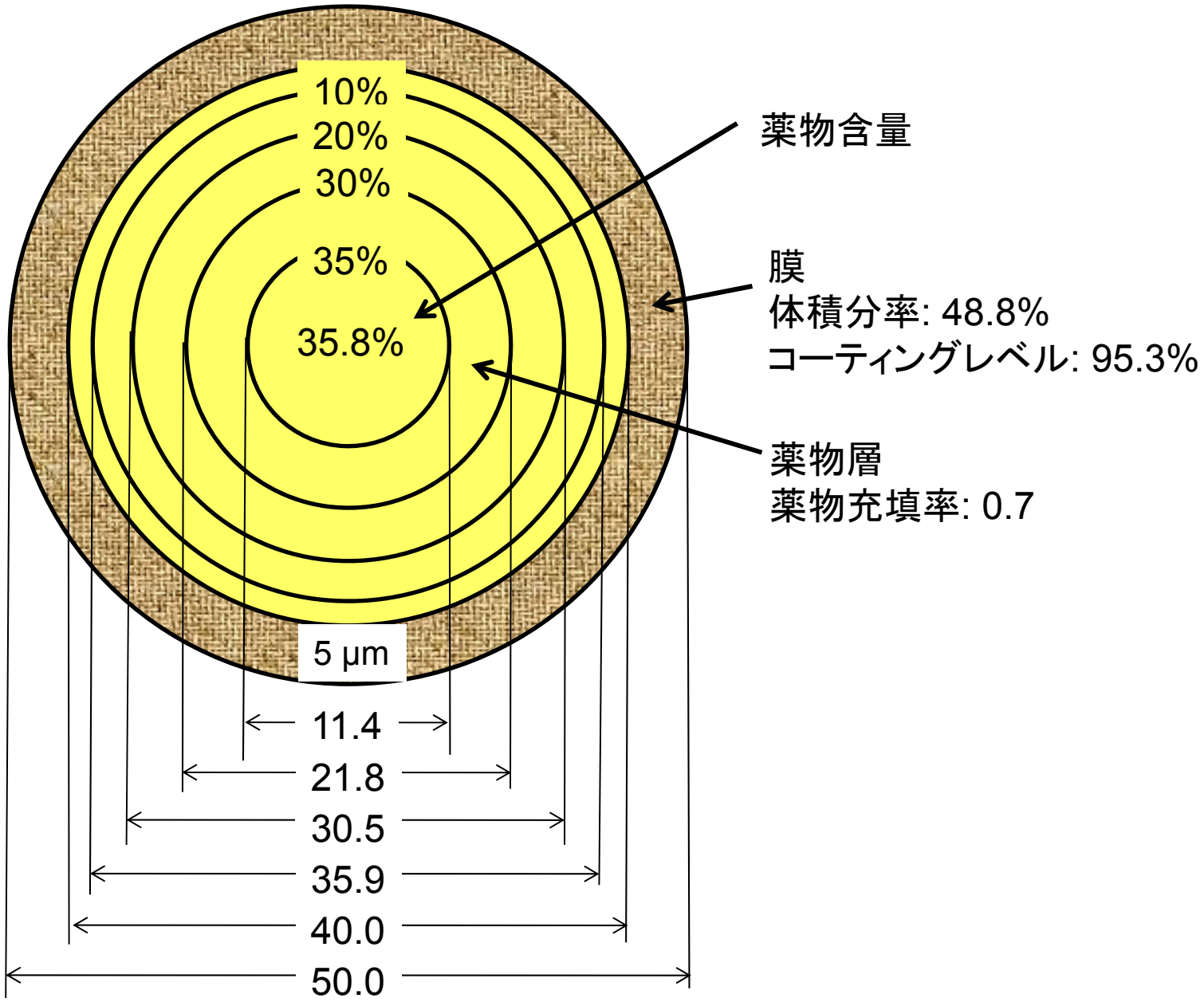
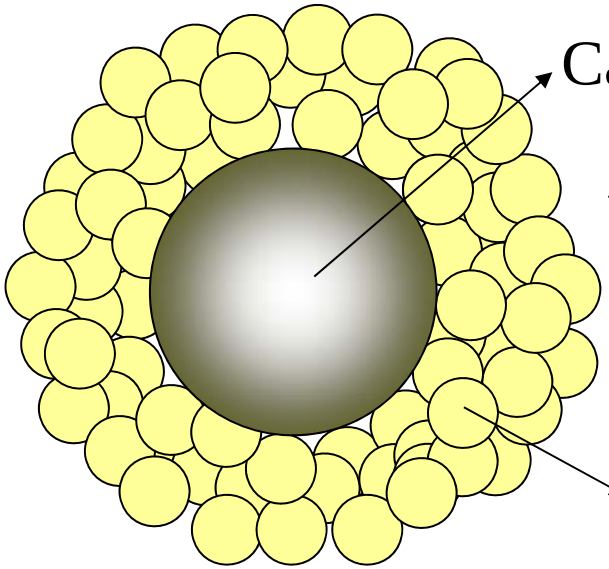


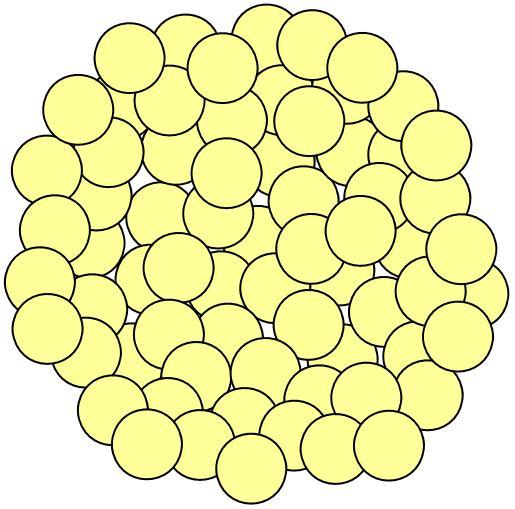
図. 50 μm のマイクロカプセルの構造と薬物含量

Structure of cores to be coated



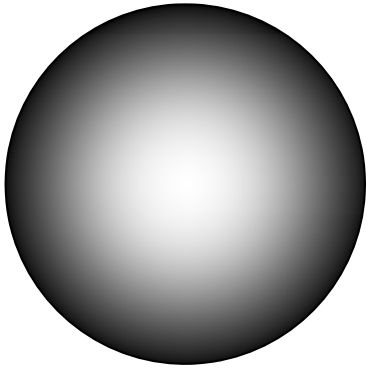
Prepared by
Tableting,
Fluidized bed,
Dry powder-processing

A. Drug-layered agglomerate



Prepared by
Tableting,
Extrusion,
Agitating/Tumbling
fluidized bed

B. Agglomerate coagulated at random



C. Drug crystal

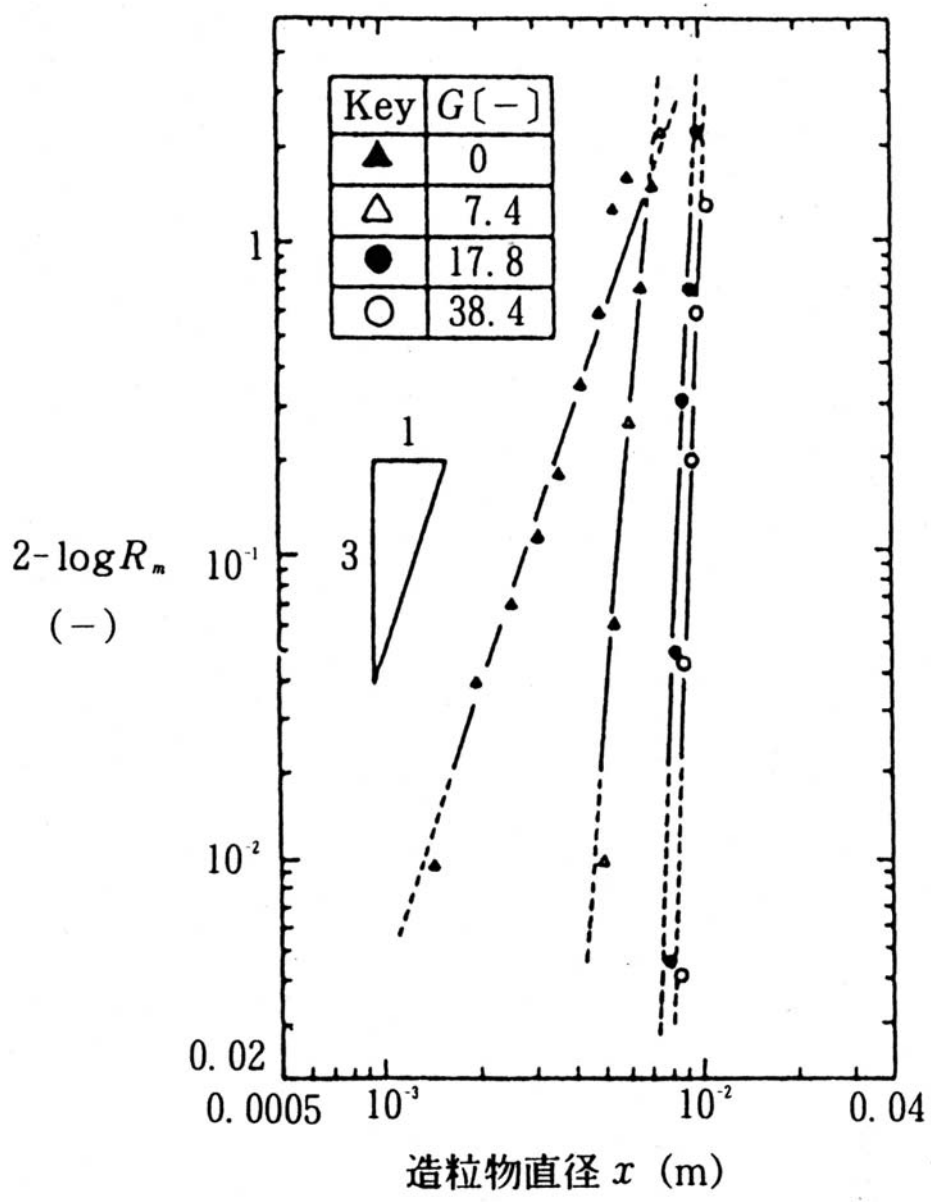
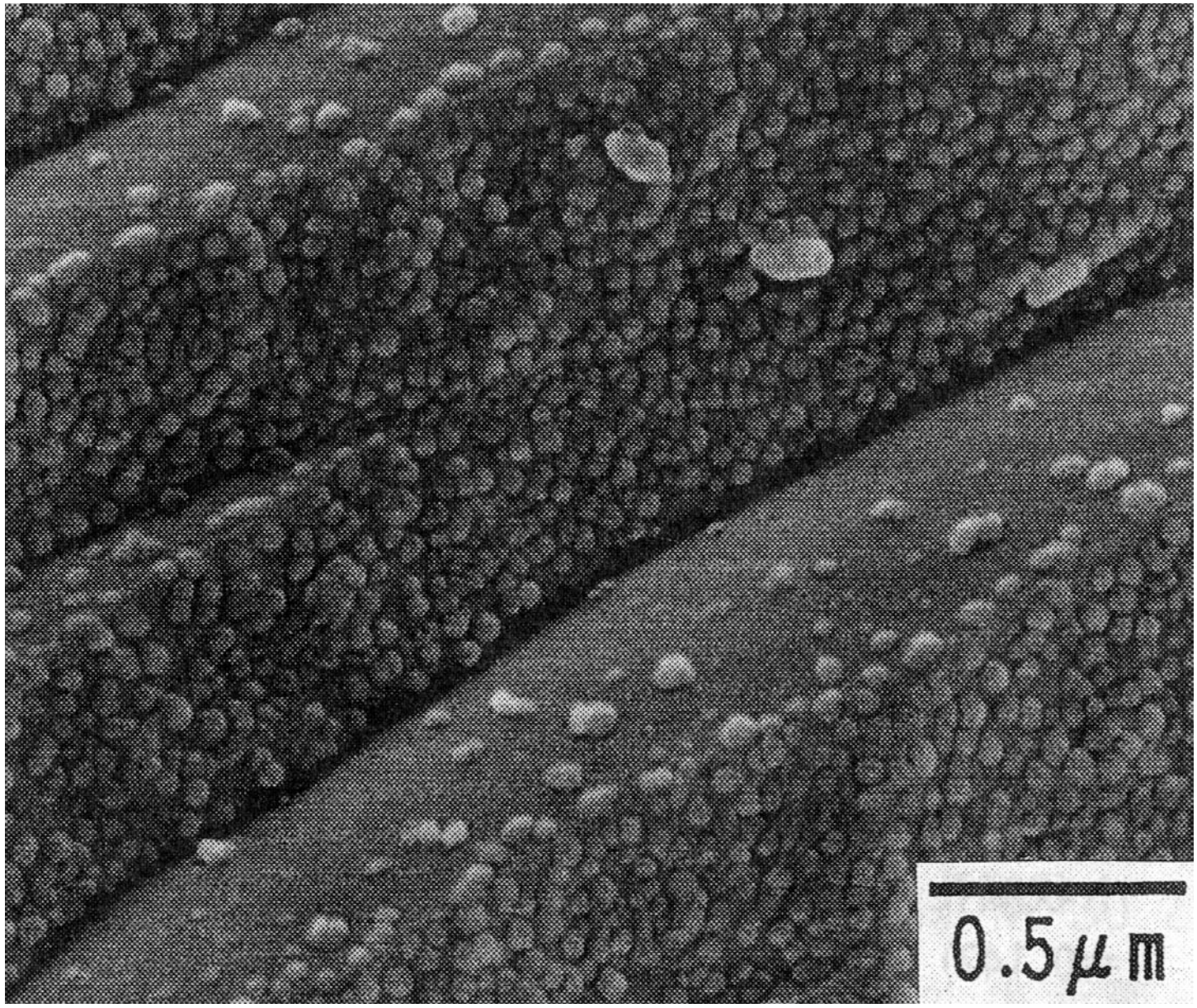


図　図 8.3 のデータにおいて時間 720 s 経過後の凝集造粒物の粒度分布 ($R_m = 100 \exp(-Bx^n)$)



クエン酸結晶の内部構造

広川典夫、化学工学, 58 (9), 682-685 (1994)

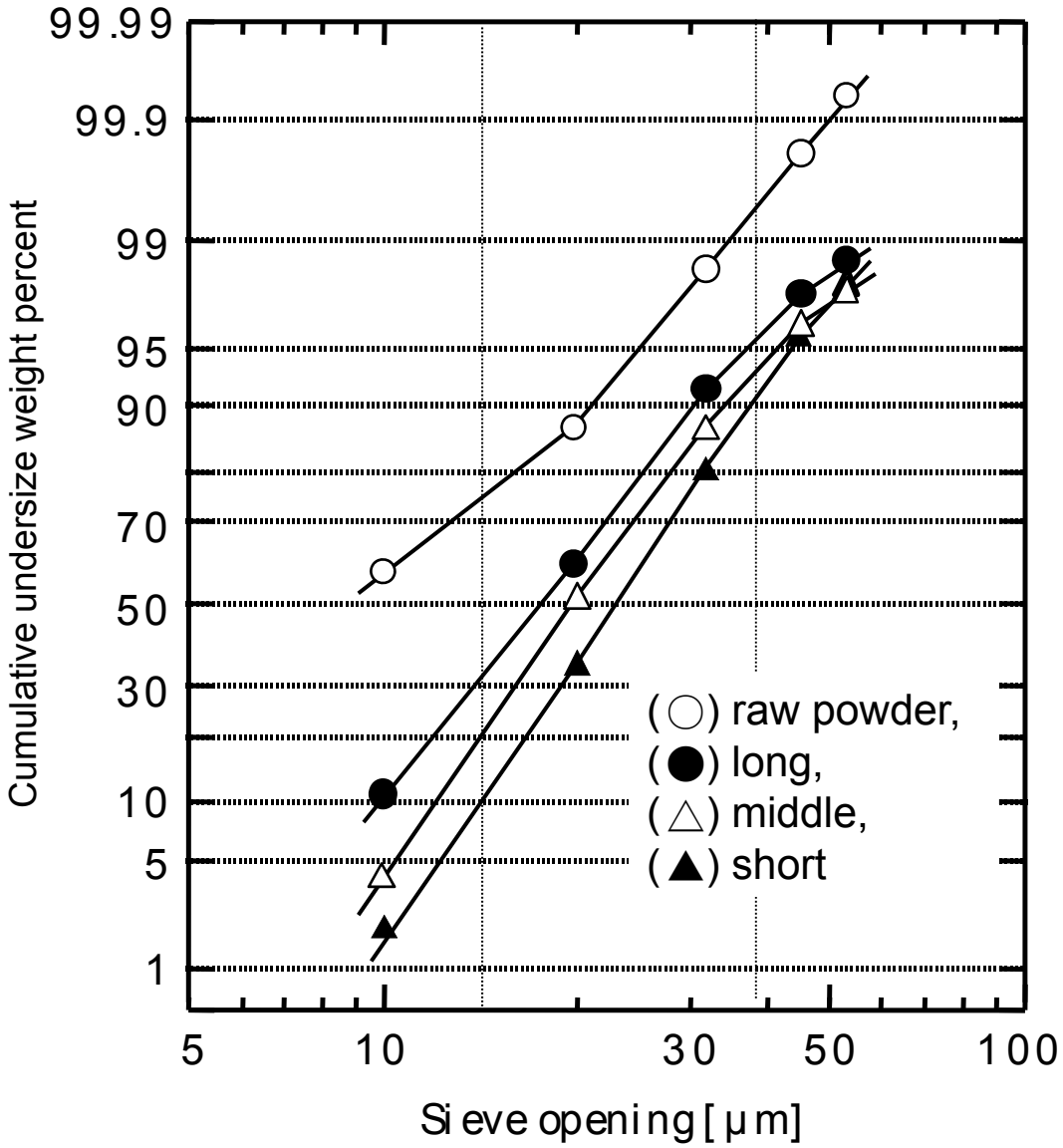
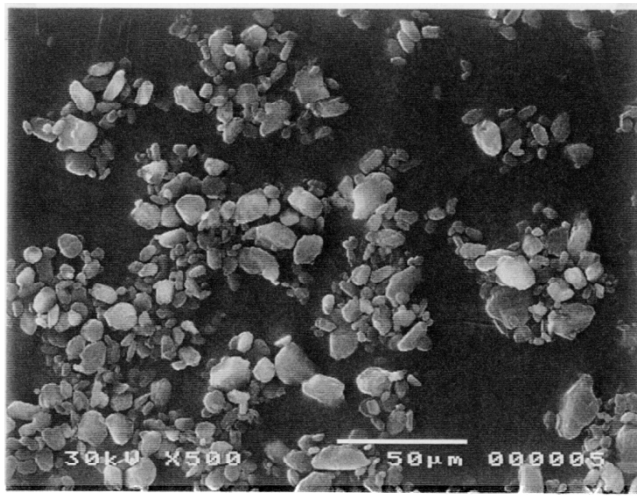
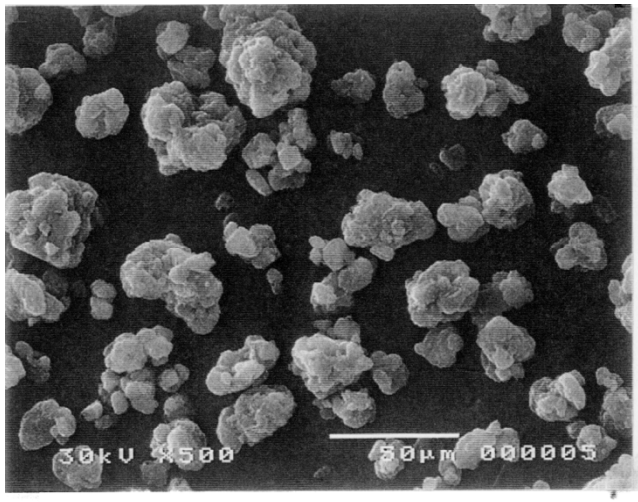


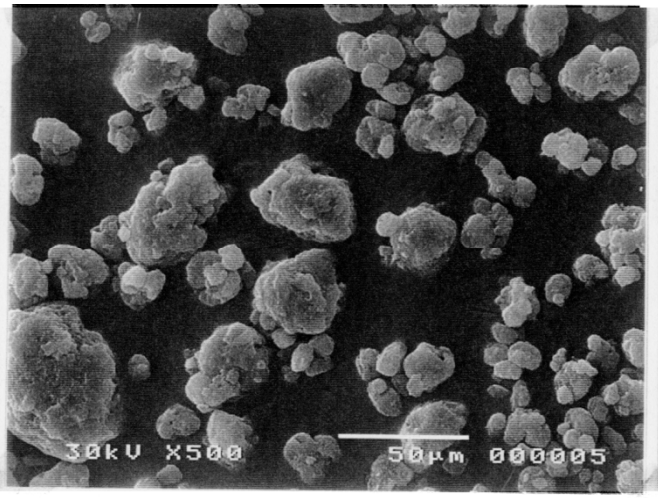
図　微細造粒物の粒度分布に及ぼすドラフトチューブ長の影響（２５％結合剤）



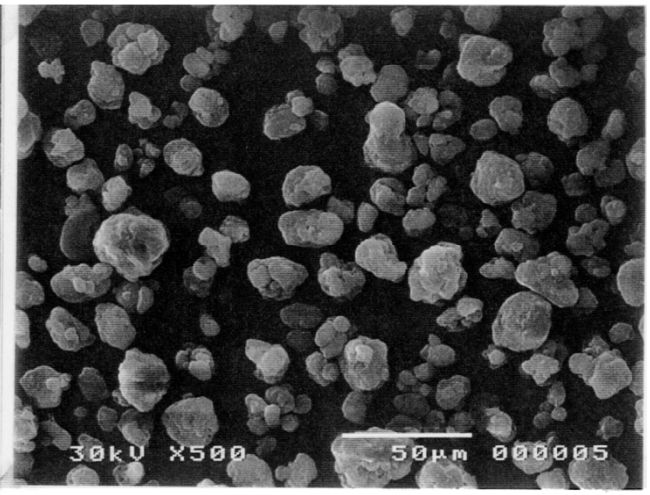
Phenacetin powder



Short



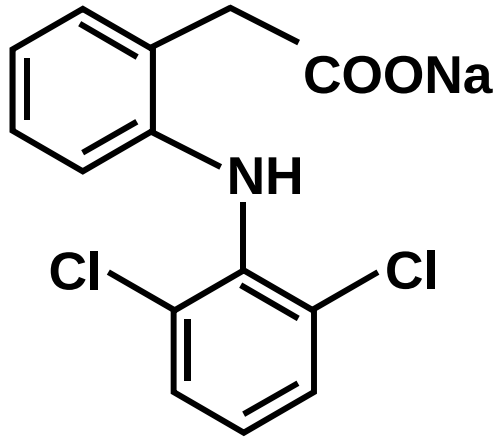
Medium



Long

SEM photographs of microagglomerates produced under the operating conditions given in Table 5. (a) long, (b) middle and (c) short draft tube.

マイクロカプセルに求められる機能



Diclofenac sodium

1. 薬物の徐放化

理由：長期投与時の消化管障害
体内消失半減期が短い

課題：水溶解度が高く，吸湿性

2. 粒子の微細化

理由：服用性と分散安定性の確保

課題：製品粒子径を100 μm以下に

3. 高薬物含量の保持

理由：一回製剤服用量が 250 mg/5mL
最大薬物服用量は　75 mg/day

課題：薬物含量は30%

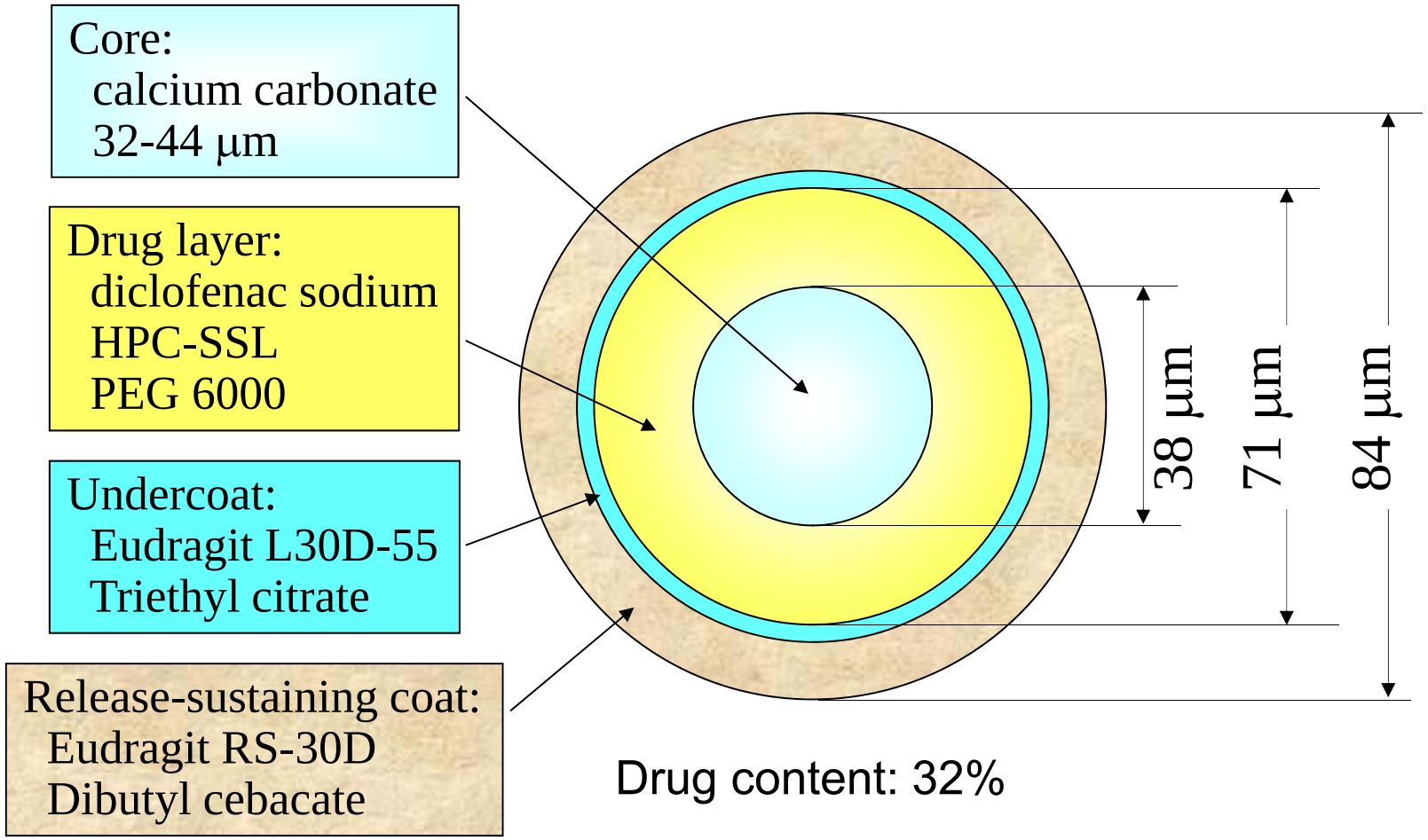


図. ジクロフェナックナトリウムの徐放性製剤の例