

Protein folding and misfolding

,
.
,
, , , , , .
,
(polypeptide chain)
.
folding ,
(chemical modification) .
가 n 가 (residue) 가 , 8ⁿ
가 .
(native state) , 가 가
(misfolding) (non-native) 가
가 가 . 가
folding . 가
(unfold) 가 folding
, (in vitro) 가 .
(in vivo) folding
.
folding .
95% 가
folding
가 .

, 가 folding

(misfolding)

(plaque)

(Alzheimer's disease) 가

가

(microtubule-binding protein) Tau

(actin-binding protein)

(gelsolin)

(serum albumin)

가

folding

(prion)

Misfolding of proteins

가

3

가

가

Jen

(APP)

가

1

3

2

2

3

가

가

가 가

(molecular chaperone) folding

folding

(chaperonin)

folding

ATPase

가

ATP 가

folding

folding

(molecular chaperone) Hsp70

(cytosol) Hsp70,

(endoplasmic reticulum) Bip, DnaK 가

가 Hsp70(heat shock

protein 70,000 MW) . Hsp70 ATP ,

가 unfold

ATP 가 가 Hsp70 가

(ribosome)

folding

(chapronin) 가 . TCiP

8 Hsp60 .

GroEL , 14 subunit

GroEL folding TCiP folding

folding folding GroEL 가

folding (GroEL). ATP 가 GroEL

GroEL folding (

GroEL). , GroEL GroES

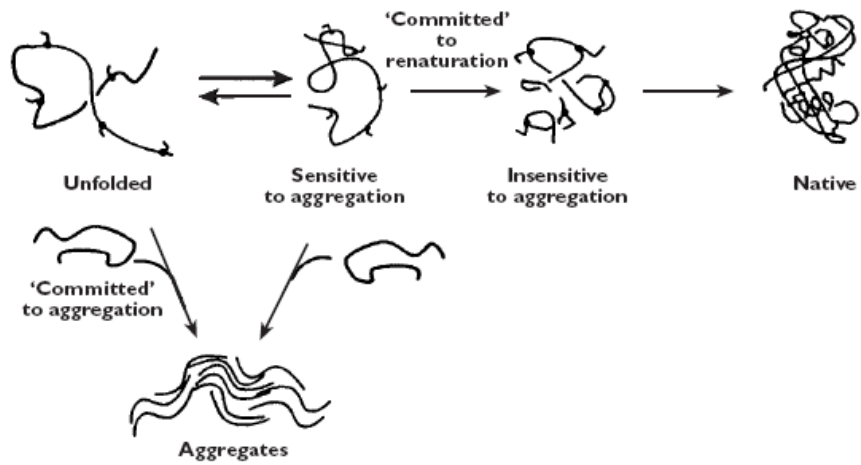
TCiP GroES

가 TCiP 가 55 kDa

folding . Hartl

가 , ,

가



1 Proposed fractals concept for protein-folding mechanism

1. Jen, L. S., Hart, A. J., Jen, A., Relvas, J. B., Gentleman, S. M., Garey, L. J. and Patel, A. J. (1998) *Nature (London)* **392**, 140–141
2. Hartl, F. U. (1996) *Nature (London)* **381**, 571–580