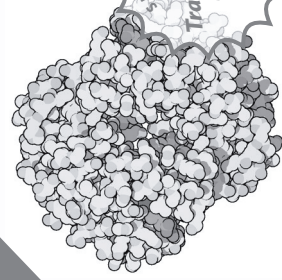


# Haemoglobin



Globular

**SPECIAL SKILL**  
**Transporting oxygen**

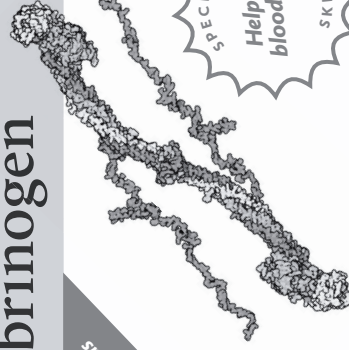
Molecular mass (daltons)	c. 65 000
Amino acids	574
Subunits	4 (2 alpha, 2 beta)
Cofactors	4 (1 haem per subunit)
Nobel Prizes	1
Related diseases	Sickle-cell anaemia, thalassaemia

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**BigPicture**

Image by David S. Goodsell, RCSB Protein Data Bank

# Fibrinogen



Fibrous

**SPECIAL SKILL**  
**Helping blood clot**

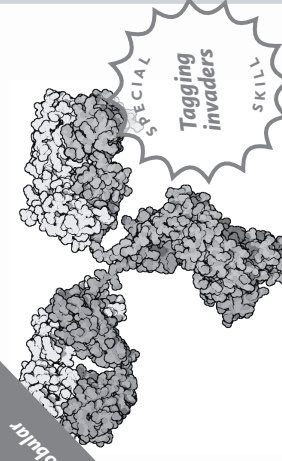
Molecular mass (daltons)	167 000 (three polypeptide chains)
Amino acids	625, 450 and 410 for each different chain
Subunits	6
Cofactors	0
Nobel Prizes	1
Related diseases	Fibrinogen deficiency (afibrinogenemia)

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**BigPicture**

Image by David S. Goodsell, RCSB Protein Data Bank

# Immunoglobulin



Globular

**SPECIAL SKILL**  
**Tagging invaders**

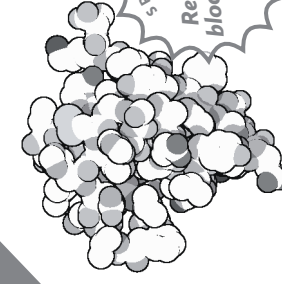
Molecular mass (daltons)	c. 150 000
Amino acids	c. 1400
Subunits	4 (2 heavy, 2 light chains)
Cofactors	0
Nobel Prizes	4
Related diseases	Autoimmune diseases

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**BigPicture**

Image by David S. Goodsell, RCSB Protein Data Bank

# Insulin



Globular

**SPECIAL SKILL**  
**Regulating blood glucose**

Molecular mass (daltons)	5808
Amino acids	51
Subunits	2 (A and B)
Cofactors	0 (active form)
Nobel Prizes	3
Related diseases	Diabetes

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**BigPicture**

Image by David S. Goodsell, RCSB Protein Data Bank

# Glucagon



Globular

**SPECIAL SKILL**  
**Raising blood glucose levels**

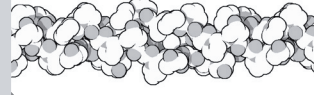
Molecular mass (daltons)	3 483
Amino acids	29
Subunits	1
Cofactors	0
Nobel Prizes	0
Related diseases	Hypoglycaemia

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**BigPicture**

Image by David S. Goodsell, RCSB Protein Data Bank

# Collagen



Fibrous

**SPECIAL SKILL**  
**Supporting structures**

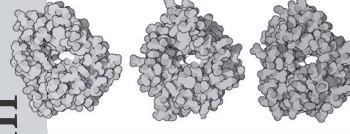
Molecular mass (daltons)	c. 360 000 (triple helix)
Amino acids	c. 1000
Subunits	3 chains per helix
Cofactors	0
Nobel Prizes	0
Related diseases	Scurvy, brittle bone disease, Ehlers-Danlos syndrome

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**BigPicture**

Image by David S. Goodsell, RCSB Protein Data Bank

# Trypsin



Globular

**SPECIAL SKILL**  
**Breaking down proteins**

Molecular mass (daltons)	c. 23 300
Amino acids	223
Subunits	2 (1 alpha, 1 beta)
Cofactors	0
Nobel Prizes	0
Related diseases	Cystic fibrosis, meconium ileus

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**BigPicture**

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**BigPicture**

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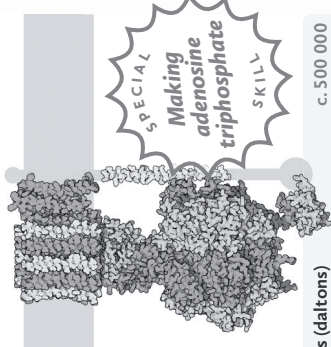
**BigPicture**

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**BigPicture**

# ATP synthase

Membrane protein



Molecular mass (daltons)	c. 500 000
Amino acids	c. 5100
Subunits	20+ (in humans)
Cofactors	0
Nobel Prizes	1
Related diseases	Mitochondrial diseases

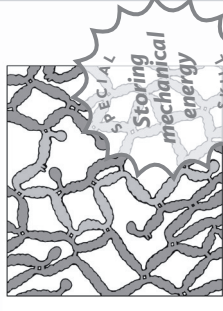
Image by David S. Goodsell, RCSI Protein Data Bank

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# Elastin

Fibrous



Molecular mass (daltons)	66 136
Amino acids	757
Subunits	Continuous mesh
Cofactors	0
Nobel Prizes	0
Related diseases	Marfan's syndrome, William's syndrome

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