

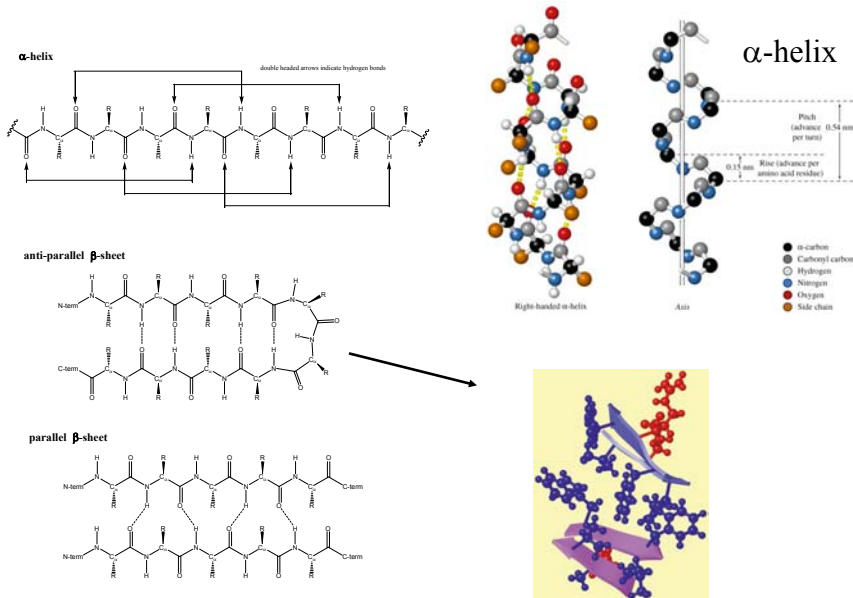
Some powerpoint slides shown during CHEM 641 class 9/12/07

Primary sequence

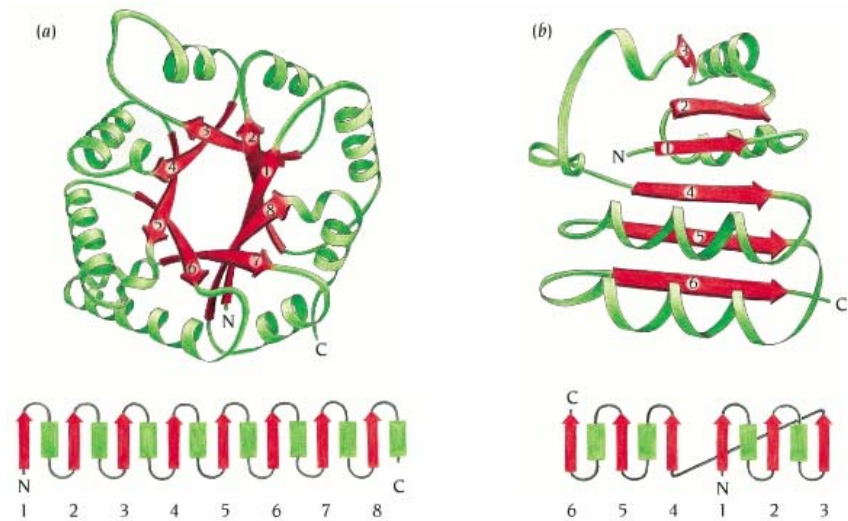
Human hemoglobin beta-subunit (FASTA format)

```
>gi|4504349|ref|NP_000509.1| beta globin [Homo sapiens]
MVHLTPEEKSAVTALWGKVVNDEVGEALGRLLVY
PWTQRRFFESFGDLSTPDAVMGNPKVKAHGKKVLG
AFSDGLAHLNLDLKGTFATLSELHCDKLHVDPENFRL
LGNVLVCVLAHHFGKEFTPPVQAAYQKVVAGVAN
ALAHKYH
```

Primary Sequence → Secondary Structure

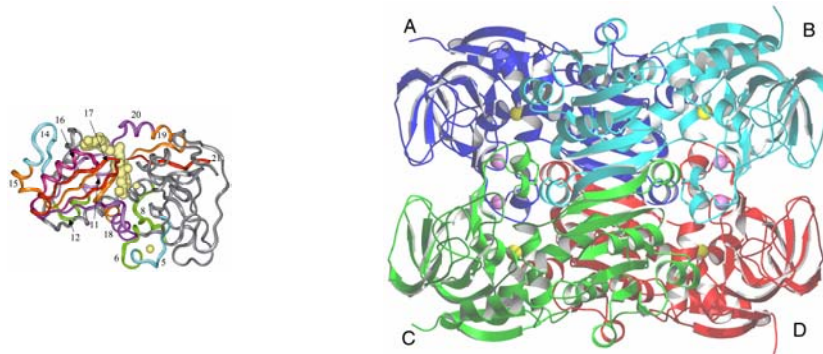


Secondary Structure → Tertiary Structure



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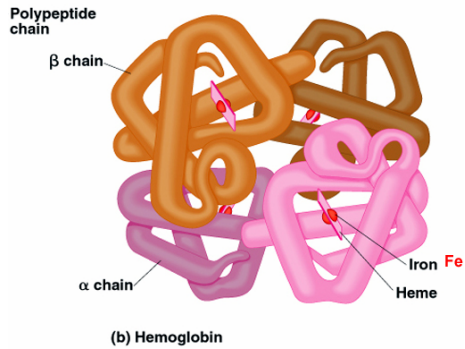
Tertiary Structure → Quaternary Structure



ht-ADH from
B. stearotherophilus
is a homotetramer

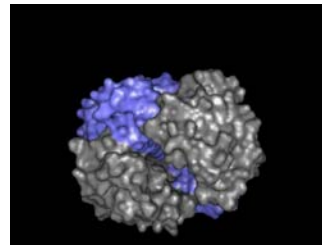
Hemoglobin and Myoglobin Quaternary Structure

Hb $\alpha_2\beta_2$ -heterotetramer



Mb – single subunit
(tertiary structure only)

Click picture
to right for Hb
dynamics movie



Classes of Globular Protein Folds

- 1) **Anti-parallel α -helix**
- 2) **Parallel β -sheet β - α - β motif**
- 3) **Anti-parallel β -sheet**
- 4) **Metal / disulfide rich**