

Attributes

Talk to a Teacher

<http://spoken-tutorial.org>

National Mission on Education through ICT

<http://sakshat.ac.in>

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Learning Objectives



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- ▶ Change **attributes** of atoms, residues and models



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- ▶ Color atoms in a protein according to **Bfactor** values



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- ▶ Change **attributes** of atoms, residues and models
- ▶ Color atoms in a protein according to **Bfactor** values
- ▶ Color residues according to **kdHydrophobicity** values



Pre-requisites



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- ▶ **Chimera interface**



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- ▶ **Chimera interface**
- ▶ <http://spoken-tutorial.org>



System Requirement



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- ▶ **Ubuntu OS version 14.04**



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- ▶ **Mozilla firefox browser 42.0**



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- ▶ **Working internet connection**



Attributes



Attributes

- ▶ **Attributes:** properties with names and values



Attributes

- ▶ **Attributes:** properties with names and values
- ▶ Atoms, bonds, residues and molecule models have **attributes**



Bfactor



Bfactor

- ▶ **Bfactor values** are a measure of mobility in the macromolecule



Bfactor

- ▶ **Bfactor values** are a measure of mobility in the macromolecule
- ▶ **Atoms with low Bfactor values** belong to a part of the structure that is well ordered



Bfactor

- ▶ **Bfactor values** are a measure of mobility in the macromolecule
- ▶ Atoms with low **Bfactor values** belong to a part of the structure that is well ordered
- ▶ Atoms with large **Bfactor values** belong to part of the structure that is very flexible



Bfactor



Bfactor

- ▶ PDB file for a protein structure contains **Bfactor** information



kdHydrophobicity



kdHydrophobicity

- ▶ **kdHydrophobicity** scales are values that define relative hydrophobicity of amino acid residues



kdHydrophobicity

- ▶ **kdHydrophobicity** scales are values that define relative hydrophobicity of amino acid residues
- ▶ **kdHydrophobicity** values are **positive** for hydrophobic residues and **negative** for polar residues



Summary



Summary

- ▶ Change **attributes** of atoms, residues and models
- ▶ Color atoms in a protien according to **Bfactor** values
- ▶ Color residues according to **kdHydrophobicity** values



Assignment



Assignment

- ▶ Open a model of **hemoglobin** (PDB code: 2HCO) on the panel
- ▶ Color the atoms according to **Bfactor values**
- ▶ Color the residues according to **kdHydrophobicity** values.



About the Spoken Tutorial Project

- ▶ Watch the video available at http://spoken-tutorial.org/What_is_a_Spoken_Tutorial
- ▶ It summarises the Spoken Tutorial project



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Spoken Tutorial Workshops

The Spoken Tutorial Project Team

- ▶ Conducts workshops using spoken tutorials
- ▶ Gives certificates to those who pass an online test
- ▶ For more details, please write to contact@spoken-tutorial.org



Acknowledgements

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- ▶ It is supported by the National Mission on Education through ICT, MHRD, Government of India
- ▶ More information on this Mission is available at

<http://spoken-tutorial.org/NMEICT-Intro>

