

Option Subject
Advanced Chemical Biology
3rd year Hilary Term 8 Lectures

BGD and CJS

Segment 1: Protein and Peptide Synthesis

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<http://www.chem.ox.ac.uk/researchguide/bgdavis.html>

Lecture 1: Overview. Symbols and Abbreviations. Structure. Structure Determination. Making Dipeptides – basic ideas. The Need for Protection. Higher Peptides. *N*-protection. *C*-protection.

Lecture 2: Peptide bond Formation. Activating Carboxylates. Racemization as a Side Reaction. Strategy. Solution Phase vs Solid Phase. Beyond Peptides, Towards Proteins.

Good books:

J. Jones, *Amino Acid and Peptide Synthesis*, OCP 7, 2nd edition, 2002

J. Jones, *The Chemical Synthesis of Peptides*, Clarendon Press, 1994

Segment 2: Making and Modifying Proteins

Lecture 3: Making Proteins. Bigger Peptides. Solid-phase Methods. Segment Assembly. Natural Peptide Synthesis. Ribosome Mechanism. The Proteome.

Lecture 4: Other Natural Acyl Transfer Mechanisms. Proteases. Sequencing for Proteomics. Inteins and Native Chemical Ligation. Modified Proteins. Post-translational Modifications. Chemical Methods of Modifying Proteins.

Good books:

J. Jones, *Amino Acid and Peptide Synthesis*, OCP 7, 2nd edition, 2002

J. Jones, *The Chemical Synthesis of Peptides*, Clarendon Press, 1994

C.T. Walsh, *Posttranslational Modification of Proteins: Expanding Nature's Inventory*, Roberts & Co, 2005