

GENETICS 302 LABORATORY ACTIVITIES page 9

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As we successfully master the prerequisite skills, we will perform the following experiments.

Note that using the PCR machine requires some lab time outside of regular lab hours.

Quizzes are administered in the last 45 minutes of the lab period. Late Lab Notebook = -10%/lab...

Tues	Lab Activity	Handouts, Protocols	Illustrations, Data
1/6	Intro to Lab Begin seed and onion sprouts for next week Isolation of DNA from thymus	2nd NBGrdSheet fr CellBio Genetics Lab Activities Lab Notebook Proc, Format Contact Paper, NB Illust'ns. Sprouting Seeds DNA isolation from thymus	Annotated page format Jar set up for sprouting Stages of DNA isolat'n
1/13	Plant chromosomes in root tips from sprouted seeds and onion Quiz	Dissect'n Scope Care & Use BinocMicrosCare, Use&Eval Use of Oil Immersion Obj. Prep of Feulgen Stain Visualizn Root tip chromsme	Dissecting scope stained root tips Root tip chromos. I Root tip chromos. II
1/20	Animal chromosomes: giant polytene chromosomes in <i>Drosophila</i> larvae	Drosophila Salivary Gland Chromosomes	<i>Drosophila</i> larva Salivary gland illust'n Polytene chromosmes
1/27	Practice loading gels Electrophoresis of DNA Quiz NOTEBOOKS DUE Wed Jan 28	Electrophoretic Separation of DNA Fragments ethidium bromide	microcentrifuge & tube Gel reag & plate prep Gel diagram after run EPh apparat & gel comb
2/3	Returned Notebooks discussed Use of X² test to evaluate data DNA Extraction from buccal cells (In computer lab)	(1 st NBGS → notebook) Importance of Sample Size X ² Probability Table DNA Prep from buccal cells	X ² calculations, conclns Notes on DNA extrcn
2/10	DNA digestion: Endonucleases MIDTERM, 3:00-5:00	Endonuclease Digstn, DNA	rxn tube, DNA calc'ns DNA dig'n tube setup
2/17	Intro to PCR machine Polymerase Chain Reaction: Your DNA with D1S80 primers	Polymerase chain reaction protocol	Steps of themocycling Thermocycler
2/24	Refinement of PCR technique Quiz [NOTEBOOKS DUE Wed. 2/25]	PCR refinements Second set of primers?	
3/3	Returned Notebooks discussed Measuring β galactosidase in bacterial cultures	2 nd NBGS → notebook β Galactosidase in Cells	ONPG hydrolysis βgal'ase assay setup tbl
3/10	Gene regulation: induction of the lactose operon Quiz FINAL EXAM: Monday 18 Mar 1:30-3:30	Gene regulation: Induction of <i>lac</i> Operon in <i>E coli</i>	lactose operon β galase dereprsn grph Collect lac-grown <i>Ecoli</i> βgalase SA in <i>E coli</i>