

For NIH Section Citations (2-d WCU Form), please see below to evaluate which section (categories) your experiment will be assigned; You may designate as “D (1-3)”, “D (4-7)”, “E”, etc.

The full NIH Guidelines Section can be accessed [here](#).

Section (Categories)	Definition	Example(s)
III-A	Introducing resistance to a clinically relevant antibiotic into a microorganism	Making <i>Staphylococcus aureus</i> resistant to doxycycline Making <i>Clostridium difficile</i> resistant to vancomycin
III-B	Cloning of toxin molecules (LD50 < 100 ng/kg)	Cloning botulinum toxin into <i>Escherichia coli</i> BL21
III-C	Deliberate transfer of rDNA/SNA, or DNA or RNA from rDNA/SNA into humans	Initiating a clinical research experiment to test the efficacy of a retroviral vector for targeting a specific disease Introducing CRISPER-Cas9 to humans to target a cancer gene
<p><b>Note: Above categories require additional reviews:</b> Categories III A-C require review by NIH (RAC and/or OBA); Level C experiments require Human Subjects (IRB) review</p>		
III-D (1-3)	rDNA/SNA experiments with pathogens rDNA/SNA experiments with pathogenic DNA DNA/RNA virus work Viral vector with helper functions	Cloning GFP plasmid into <i>Pseudomonas aeruginosa</i> CRISPER-Cas9 modification of <i>Helicobacter pylori</i> Using modified <i>Plasmodium falciparum</i> purchased from ATCC Cloning <i>Salmonella typhimurium</i> genes into <i>E. coli</i> BL21 Packaging a 3 <sup>rd</sup> generation lentiviral vector into HEK cells
III-D (4-7)	rDNA/SNA experiments in animals or microorganisms going into animals	Modifying the Aag gene in rats Injecting modified HeLa cells into mice Feeding mice <i>Lactobacillus reuteri</i> containing GFP

	<p>rDNA/SNA experiments in weeds or exotic plants or with plant pathogens</p> <p>Select influenza studies</p> <p>More than 10L of culture in one vessel</p>	<p>Growing 11 liters of <i>E. coli</i> K12 with yellow fluorescent protein</p> <p>Generating a novel strain of influenza by combining fragments from different seasonal strains</p>
<b>III-E</b>	<p>rDNA/SNA in domestic, non-weed plants, or with non-pathogenic organisms in plants</p> <p>Transgenic mice work at BSL1</p> <p>Anything not covered by other categories</p> <p>Work with &lt;2/3 of DNA from a eukaryotic virus in tissue culture at BL1</p>	<p>Modifying <i>Arabidopsis</i></p> <p>Adding <i>B. subtilis</i> with GFP to the soil of spinach</p> <p>Creating transgenic mice in BSL1 containment</p> <p>Cloning GFP into <i>E. coli</i> BL21</p>
<b>III-F</b>	<p>rDNA/SNA that can't replicate in living cells or can't enter living cells</p> <p>Low risk rDNA/SNA already found in nature</p> <p>Transposons found in nature</p> <p>rDNA/SNA work in a specific list of organisms</p>	<p>rDNA/SNA (with less than half of any eukaryotic virus) propagated and maintained in cells in tissue culture</p> <p>rDNA/SNA in <i>E. coli</i> K-12, <i>S. cerevisiae</i>, <i>S. uvarum</i>, <i>K. lactis</i>, or <i>B. subtilis</i> strains</p> <p>PCR fragments from genomic DNA</p>

Obtained from: <https://ehs.mit.edu/site/biosafety/nih-guidelines>