



Shipping Biological Materials – Quick Reference Guide

* This document provides UC Berkeley researchers a quick overview of government requirements and internal policy for transporting biological materials, either to or from campus. For additional information on shipping biological or other hazardous materials, visit <http://ehs.berkeley.edu/hazmat/hazshipping.html>.

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Material	Shipment	Instructions
<p>Animals</p> <p>(all living or dead vertebrates and invertebrates not known to contain an infectious agent)</p> <p>(for animals or animal disease vectors known, or suspected to contain, an infectious agent, see “Infectious agents” section, page 2)</p> <p>(for animal products, see “Blood/body fluids...” section, page 3)</p> <p>(for plant pests, see “Plants...” section, page 4)</p>	Import into the United States	<ul style="list-style-type: none"> • CDC permit for live bats, or snails capable of transmitting human pathogens www.cdc.gov/od/eaipp/ • USDA permit VS 17-129 for livestock and poultry species, including embryos www.aphis.usda.gov/vs/ncie/; need CDFA permit first www.cdfa.ca.gov/ahfss/ah/permits.htm. • USDA guideline 1103 for laboratory animals www.aphis.usda.gov/vs/ncie/fac_imp.html • USFW permit (www.fws.gov/permits/) for selected and endangered species (“Species Lists” link, also check CITES) • FDA notification for human or animal food: Contact EH&S • TSCA certification for hazardous chemicals: Contact EH&S • Ensure shipper has export permit, if required.
	Export from the United States	<ul style="list-style-type: none"> • Determine if export license needed: 1) Run through “Decision Tree”, and 2) Have the OVCR evaluate recipient http://research.chance.berkeley.edu/echome.cfm. • USFW permit (www.fws.gov/permits/) for selected and endangered species (“Species Lists” link, also check CITES) • Have receiver secure import permit, if required.
	Between states	<ul style="list-style-type: none"> • USDA permits – same permits are required for transport between states as for import (above); ensure receiver also has permit • USFW permit 3-200-55 for some endangered species (“Species Information” link) www.fws.gov/endangered/permits/index.html • To CA only: CDFG permit for restricted species (list at “Laws”) www.dfg.ca.gov/licensing/specialpermits/specialpermits.html • To CA only: CDHS permit for wild animals that can transmit human pathogens www.dhs.ca.gov/ps/dcdc/disb/disbindex.htm
	All shipments sent by UCB personnel, and receipt of animals	<ul style="list-style-type: none"> • Live vertebrates, or invertebrates in an OLAC facility, must be pre-authorized www.olac.berkeley.edu/Olac/Forms/index.shtml. • Check if shipment contains other regulated ‘hazardous materials’ • EH&S assistance <u>mandatory</u> for the following items: <ul style="list-style-type: none"> • Sending ≥ Biosafety Level 2 transgenic animals • Sending live infected animals (also requires federal approval) • Chemicals greater than ‘excepted quantities’, radioisotopes



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Infectious agents (live pathogens for humans or animals)	Import into the United States	<ul style="list-style-type: none"> • CDC permit for human pathogens www.cdc.gov/od/eaipp/ • USDA (VS16-3) and CDFA permit for <u>any</u> pathogen, or vector of disease, for livestock or poultry www.aphis.usda.gov/vs/ncie/ <ul style="list-style-type: none"> • CDFA permit first (request by letter, include same information) www.cdca.ca.gov/ahfss/ah/biologics_micro_parasites.htm • TSCA certification for hazardous chemicals: Contact EH&S
	Export from the United States	<ul style="list-style-type: none"> • Determine if export license needed: 1) Run through “Decision Tree”, and 2) Have the OVCR evaluate recipient http://research.chance.berkeley.edu/echome.cfm. • Have receiver secure import permit.
	Between states	<ul style="list-style-type: none"> • USDA permit – same permit is required for transport between states as for import (above); ensure receiver also has permit
	All shipments sent by UCB personnel	<ul style="list-style-type: none"> • Verified killed agents are not regulated, but may require permits. • It is against the law for you to carry/check these on an airline. • The US Postal Service and UPS generally do not allow/ship these agents. World Courier, DHL and FedEx generally do. • <u>Shipping training</u> is required for infectious agents and/or dry ice (CD at EH&S), and ‘excepted quantities’ of regulated chemicals (hint: check media). • EH&S assistance <u>mandatory</u> for the following items <ul style="list-style-type: none"> • Sending live infected animals (also requires federal approval) • Chemicals greater than ‘excepted quantities’, radioisotopes • If by car, follow additional instructions on page 3.
Non-pathogenic micro-organisms (living, non-pathogenic for humans, animals, or plants) (e.g. <i>Escherichia coli</i> K-12 and BL21 strains; <i>Saccharomyces cerevisiae</i>)	Import into the United States	<ul style="list-style-type: none"> • USDA guideline 1116 www.aphis.usda.gov/vs/ncie/fac_imp.html • TSCA certification for hazardous chemicals: Contact EH&S
	Export from the United States	<ul style="list-style-type: none"> • Determine if export license needed: 1) Run through “Decision Tree”, and 2) Have the OVCR evaluate recipient http://research.chance.berkeley.edu/echome.cfm • Have receiver secure import permit, if required.
	Recombinant expressing non-toxic proteins (for international shipments)	<ul style="list-style-type: none"> • USDA guideline 1114 www.aphis.usda.gov/vs/ncie/fac_imp.html • Capable of altering animals, plants or microbiological substances in a way not normally the result of natural reproduction, then proper shipping name: “Genetically modified micro-organisms” • If do not meet definition above and do not contain conjugation proficient plasmids (λ or Ff), biological component not regulated.
	All shipments sent by UCB personnel	<ul style="list-style-type: none"> • <u>Shipping training</u> is required for dry ice (CD at EH&S), and ‘excepted quantities’ of regulated chemicals (hint: check media). • EH&S assistance <u>mandatory</u> for the following items: <ul style="list-style-type: none"> • “Genetically modified micro-organisms”, as defined above • Viral vectors (give design, if replication tested, inserted genes) • Chemicals greater than ‘excepted quantities’, radioisotopes • If no regulated ‘hazardous material’, no shipping restrictions
Viral vectors		



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Blood Body fluids Tissues Cells Cell lines (from humans or animals) Animal products * most nonhuman primate species are internationally-regulated endangered species	Import into the United States	<ul style="list-style-type: none"> • CDC permit if human pathogen possible www.cdc.gov/od/eaipp/ • USDA (VS16-3) and CDFA permit if from/exposed to animals/animal materials www.aphis.usda.gov/vs/ncie/biofacts.html <ul style="list-style-type: none"> • CDFA permit first (request by letter, include same information) www.cdfa.ca.gov/ahfss/ah/biologics_micro_parasites.htm • USFW permit 3-200-29 or 3-200-37 (www.fws.gov/permits/) if from selected species (“Species Lists” link, also check CITES) • FDA notification for human or animal food: Contact EH&S • TSCA certification for hazardous chemicals: Contact EH&S • Ensure shipper has export permit, if required.
	Export from the United States	<ul style="list-style-type: none"> • Determine if export license needed: 1) Run through “Decision Tree”, and 2) Have the OVCR evaluate recipient http://research.chance.berkeley.edu/echome.cfm. • Have receiver secure import permit, if required. <ul style="list-style-type: none"> • USDA guidance www.aphis.usda.gov/vs/ncie/iregs/products/ • USFW permit (www.fws.gov/permits/) for samples from selected and endangered species* (“Species Lists” link, also check CITES)
	Between states	<ul style="list-style-type: none"> • USDA permits – same permits are required for transport between states as for import (above); ensure receiver also has permit <ul style="list-style-type: none"> • Shipper statements, if recommended for imports, not needed.
	All shipments sent by UCB personnel	<ul style="list-style-type: none"> • If may contain an infectious agent, see “Infectious agents”, page 2 • Blood, body fluids, tissues or cells unlikely to contain pathogens must adhere to the following (and then, no other requirements, unless package also contains a regulated ‘hazardous material’): <ul style="list-style-type: none"> • Human materials-affix the biohazard symbol to inner package • See www.iata.org/nr/rdonlyres/2f939c1e-b406-4ece-adb9-922f867803c5/0/guidance_doc62dgr_48.pdf, pages 3-4 and 10, for packaging information for ‘exempt patient specimens’. • If ship by US Postal Service, see section 10.17.10 at http://pe.usps.gov/text/dmm300/601.htm#wp1194388. • Cell lines–do not need to mark as exempt patient specimens • <u>Shipping training</u> is required for dry ice (CD at EH&S), and ‘excepted quantities’ of regulated chemicals (hint: check media). • EH&S assistance <u>mandatory</u> for the following items: <ul style="list-style-type: none"> • Chemicals greater than ‘excepted quantities’, radioisotopes
	UCB policy - Additional requirements for transport by University personnel on California roads	<ul style="list-style-type: none"> • None for animal samples; for human specimens/cell lines: <ul style="list-style-type: none"> • Ensure the driver is 1) a University employee with a valid driver’s license and 2) is on the BUA as an “Authorized User”. • Use a University vehicle (the department or driver may be liable if they use a non-University vehicle and, during transport, an accident occurs involving the material). • Affix to outside of package: 1) list of contents and 2) BUA cover page with biohazard symbol visible. • Ensure the package is secure within the vehicle. • If you leave the vehicle, ensure the package is not visible.



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Plants	Import into the United States	<ul style="list-style-type: none"> USDA permit PPQ526 for live plant pests, fruit flies, bees, butterflies, moths, snails, slugs, earthworms, noxious weeds, or parasitic plants www.aphis.usda.gov/ppq/permits/FAQ.html USDA PPQ permit for plants/plant products or soil www.aphis.usda.gov/ppq/permits/plantproducts/howtoapply.html USDA BRS notification for most genetically altered plants/materials www.aphis.usda.gov/brs/notification.html, use ePermits or www.aphis.usda.gov/brs/pdf/2000.pdf USDA BRS permit for live genetically modified plants/materials that cannot use notification, plant pests, or biocontrol organisms, use ePermits or www.aphis.usda.gov/brs/pdf/2000.pdf USFW permit (www.fws.gov/permits/) for selected and endangered species (“Species Lists” link, also check CITES) FDA notification for human or animal food: Contact EH&S TSCA certification for hazardous chemicals: Contact EH&S Ensure shipper has export permit, if required.
Plant material (seeds, tubers, tissue cultures, plantlets, and leaves)	(or from Hawaii or Alaska for USDA PPQ or BRS)	
Plant pests (pathogens, insects, arthropods, other invertebrates)		
Plant products (timber/timber products, fruits, vegetables, rice/related articles, corn/related plants, sugarcane, foreign cotton/covers, cut flowers)	Export from the United States	<ul style="list-style-type: none"> Determine if export license needed: 1) Run through “Decision Tree” for material, and 2) Have the OVCR evaluate recipient http://research.chance.berkeley.edu/echome.cfm. Have receiver secure import permit, if required. USFW permit (www.fws.gov/permits/) for selected and endangered species (“Species Lists” link, also check CITES)
	Between states (from Hawaii or Alaska = import)	<ul style="list-style-type: none"> USDA permits – same permits are required for transport between states as for import (above); ensure receiver also has permit USFW permit (www.fws.gov/permits/applicationforms/ApplicationPQ.shtml#plants) for endangered plant and invertebrate species (www.fws.gov/international/permits/web%20list%20cites.htm)
	Within California	<ul style="list-style-type: none"> CDFA permit to move or use live plant pests, noxious weeds, or biocontrol agents www.cdafa.ca.gov/phpps/permitsandregs.htm
Soil	All shipments sent by UCB personnel, and receipt of invertebrates	<ul style="list-style-type: none"> Live invertebrates to/from an OLAC facility must be pre-authorized www.olac.berkeley.edu/Olac/Forms/index.shtml. Shipping training is required for dry ice (CD at EH&S), and ‘excepted quantities’ of regulated chemicals (hint: check media). EH&S assistance <u>mandatory</u> for the following items: <ul style="list-style-type: none"> Sending recombinant micro-organisms or organisms capable of altering animals, plants or microbiological substances in a way not normally the result of natural reproduction Sending live infected animals (also requires federal approval) Chemicals greater than ‘excepted quantities’, radioisotopes If no regulated ‘hazardous material’, no shipping restrictions
Biocontrol organisms		
Medical waste	All	<ul style="list-style-type: none"> Contact EH&S



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Amino acids, antibodies, DNA/RNA, enzymes, plasmids, purified proteins	Import into the United States	<ul style="list-style-type: none"> USDA and CDFA permit if from/exposed to animals/materials/animal pathogens www.aphis.usda.gov/vs/ncie/biofacts.html CDFA permit first (request by letter, include same information) www.cdfa.ca.gov/ahfss/ah/biologics_micro_parasites.htm USFW permit 3-200-29 or 3-200-37 (www.fws.gov/permits/) if from selected species (“Species Lists” link, also check CITES) FDA notification for human or animal food: Contact EH&S TSCA certification for hazardous chemicals: Contact EH&S
	Export from the United States	<ul style="list-style-type: none"> Determine if export license needed: 1) Run through “Decision Tree”, and 2) Have the OVCR evaluate recipient http://research.chance.berkeley.edu/echome.cfm. Have receiver secure import permit, if required. <ul style="list-style-type: none"> USDA guidance www.aphis.usda.gov/vs/ncie/iregs/products/ USFW permit 3-200-29 or 3-200-37 (www.fws.gov/permits/) if from selected species (“Species Lists” link, also check CITES)
	Between states	<ul style="list-style-type: none"> USDA permit – same permit is required for transport between states as for import (above); ensure receiver also has permit
	All shipments sent by UCB personnel	<ul style="list-style-type: none"> <u>Shipping training</u> is required for dry ice (CD at EH&S), and ‘excepted quantities’ of regulated chemicals (hint: check media). EH&S assistance <u>mandatory</u> for the following items: <ul style="list-style-type: none"> Chemicals greater than ‘excepted quantities’, radioisotopes If no regulated ‘hazardous material’, no shipping restrictions

BUA	Biological Use Authorization (http://ehs.berkeley.edu/healthsafety/biosafety/bua.html)
CDC	Centers for Disease Control and Prevention (www.cdc.gov)
CDFA	California Department of Food and Agriculture (www.cdfa.ca.gov)
CDFG	California Department of Fish and Game (www.dfg.ca.gov)
CDHS	California Department of Health Services (www.dhs.ca.gov)
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora; lists (appendices) of endangered species at www.cites.org/eng/app/index.shtml
EH&S	Office of Environment, Health & Safety (http://ehs.berkeley.edu/hazmat/hazshipping.html)
FDA	United States Food and Drug Administration (www.cfsan.fda.gov/~dms/fsbtac13.html)
OLAC	Office of Laboratory Animal Care (www.olac.berkeley.edu)
OVCR	Office of the Vice Chancellor for Research (http://research.chance.berkeley.edu/)
TSCA	Toxic Substances Control Act (www.epa.gov/opptsfrs/home/rules.htm)
USDA BRS	United States Department of Agriculture, Biotechnology Regulatory Service (www.aphis.usda.gov/biotechnology/)
USDA PPQ	United States Department of Agriculture, Plant Protection and Quarantine (www.aphis.usda.gov/plant_health/)
USDA VS	US Department of Agriculture, Veterinary Services (www.aphis.usda.gov/animal_health/)
USFW	United States Fish and Wildlife Service (www.fws.gov)