

## Phenotyping: Atherosclerosis Panel

Charles River Discovery Services provides a variety of phenotyping panels based on therapeutic area to assist with characterizing your unique models.

Our Atherosclerosis Panel includes:

### Basic Characterization

- *PhenoFirst® Panel*

PhenoFirst® includes *in vivo* evaluation, basic pathology, and basic clinical pathology. The organs this panel targets include the heart, aorta, carotid arteries, kidneys, lungs, liver, brain, and calvarium. Sample size is determined in consultation between the customer and Charles River professional staff. Age- and sex-matched animals of appropriate genotype and background are recommended.

### Additional Characterization

- *Age of Onset and Characterization*

A breeding colony is set up at Charles River. Research suggests that hypertension often precedes development of atherosclerotic lesions. Beginning at 4 weeks of age, the lipid profile, systolic blood pressure, and body weights are assessed bi-weekly. At 8 weeks of age, body composition is evaluated via a whole body DEXA Scan. Transthoracic echocardiography is also performed to assess cardiovascular function and to screen for atherosclerotic lesions. DEXA Scan and echocardiography is repeated on a monthly basis. At the termination of study, hematology, standard clinical chemistry, urinalysis, and rodent multi-analyte profile analyses are performed. A complete necropsy is performed with histologic assessment by a board-certified veterinary pathologist. The resulting data is evaluated to determine the onset and progression of atherosclerosis and hypertension.

- *Diet Challenge and Characterization*

A breeding colony is established at Charles River. Animals are placed on an atherogenic diet (i.e. Paigen or Western diet) at 4 weeks of age. Supplemental sodium administration via food or drinking water to accelerate the onset of hypertension is also a consideration. A baseline lipid profile, systolic blood pressure, body weight, DEXA Scan, and echocardiographic assessment are performed. Body weights are performed weekly, with lipid profiles and systolic blood pressure assessed bi-weekly. DEXA Scan and transthoracic echocardiography are performed monthly.

At the termination of study, hematology, clinical chemistries, urinalysis, and rodent multi-analyte profiles are performed. A complete necropsy is performed with histologic assessment by a board-certified veterinary pathologist. The resulting data is evaluated to characterize acceleration of the onset and progression of atherosclerosis and hypertension as a result of atherogenic diet and/or high sodium intake.

- *Rodent Multi-Analyte Profile*

Each animal is screened for 60 plasma biomarker levels, including C-Reactive Protein.

- *Body Composition Assessment*

A DEXA Scan is performed to determine percent total body fat, total bone mineral density, and total bone mineral concentration.

- *Ultrasound and Echocardiography*

Transthoracic echocardiography is performed on anesthetized mice using the VisualSonics Vevo 770 High-Resolution *in vivo* Imaging System. Cardiac function assessments, vascular wall motion and thickness, peak blood velocity, and atherosclerotic plaque detection in the aortic root are performed at specified time points.

### Customized Characterization

We recognize that research goals vary. Our team of laboratory animal professionals is available to customize a model characterization plan that meets individual needs and helps you achieve your goals more efficiently.

### Available Panels

In addition to the Atherosclerosis Panel, Discovery Services provides targeted phenotyping to characterize obesity, diabetes, metabolism, hypertension, oncology, osteoporosis, reproduction issues, respiratory function, embryonic lethality, Huntington's disease, neurodegenerative disease, and Metabolic Syndrome in your unique model.

**For more information, please call 1.877.CRIVER.1  
or e-mail [askcharlesriver@crl.com](mailto:askcharlesriver@crl.com).**