Potential Biomarkers for the Heart/Cardiovascular System [7,13,16]

Considerations for Potential Biomarkers
(Please determine whether the parameters identified in each column would/would not apply to the biomarker.)

Potential Biomarkers	Useful for Predicting human disease or increased risk of disease	Useful for rodents (sensitivity/ specificity)	Detects tissue injury or altered function	Useful for detection of alterations across many diseases	Methods for human analysis applicable to rodent specimens	Other Special Concerns: e.g., Specific time(s) for biomarker measurement; additional animals needed
Telemetry						
Electrocardiogram, heart rate, blood pressure, temperature [12,18]						
Serum Biomarkers						
Troponins T & I [13,16,17,22,25]						
Natriutetic protein [1,16]						
Myeloperoxidase [2,16]						
Creatinine kinase [16,22]						
Lactate dehydrogenase [22]						
Ischemia-modified albumin [2,16]						
Glycogen phosphorylase [2]						
Matrix metalloproteinase [2]						

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Serum Biomarkers cont'd						
Inflammatory cytokines (e.g., TNFa, IL-6, CRP) [2,16,25]						
Choline [2]						
Myoglobin [22]						
Tissue Biomarkers						
G protein-coupled receptor kinase-2 (heart & lymphocytes) [11]						
beta-Adrenergic receptor (heart) [11]						
Superoxide dismutase (heart) [5,24]						
DNA damage (heart) [5,8,24]						
Aconitase (heart) [24]						
Proteomic Profiles						
Heart [14]						
Serum [21]						

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***Gene Analysis* (heart)** [7,10,15,20]						
Energy production (e.g. ATP synthase)						
Lipid metabolism						
Mitochondria (dehydrogenases)						
Heart structural proteins						
Adhesion/cell connection proteins						
Growth factors						
Cytokines/chemokines of inflammation						
Temperature regulation						
G protein signals/kinases						
Ion transport						
Protein degradation						
Tissue pathology						
Electron microscopy [6,9,23]						
Apoptosis stain [9,19,23]						
Morphometry [6]						

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Tissue Pathology cont'd						
Histochemistry [5,8,9,19,25]						
Special stains (e.g., trichrome & oil red O) [5,9,19,24,25]						
Imaging **(Magnetic resonance microscopy & computed tomography)** [3,4]						

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