ChemPartner
Dedicated to LifeScience

METABOLIC & CARDIOVASCULAR

Overview of Capabilities

- Extensive experiences in drug discovery and serving global pharmaceutical and biotechnology companies
- Special *in vitro* assays to support drug screen
- Complex disease animal models for studies in areas of Diabetes/Obesity, Renal, Liver and Cardiovascular diseases.
- Experience with IND Filing
- Strong capability of assay and animal model development

Frequently Used Readouts

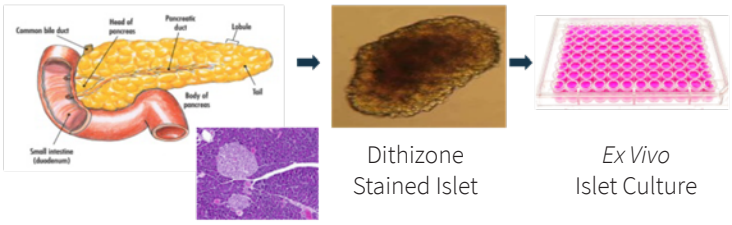
- Compound potency and selectivity, IC50, EC50
- Blood and urine biochemistry, blood hematology
- Metabolic Factors:
  - Leptin, Insulin, HbA1c, Albuminuria, Cytokines
  - Lipid (TC, TG, HDL, LDL), Liver (ALT, AST, ALP, A/G), Kidney (UA, UREA, CREA), Heart (CK, LDH), Etc.
- Blood Pressure
- Histopathological assessment (pancreas: islet pathology, insulinitis; liver: inflammation, steatosis, fibrosis; aorta: atherosclerosis (en face staining); kidney: fibrosis, glomerulosclerosis; etc.)

In Vitro Assays for Metabolic Targets

- Metabolic biomarker assay development and validation
- GLP1, DPPIV, DPPVIII, PCSK9 (protein, LDL uptake)
- URTA1 inhibition
- SGLT1 & SGLT2 inhibition
- Mitochondria function assay: ROS, membrane potential

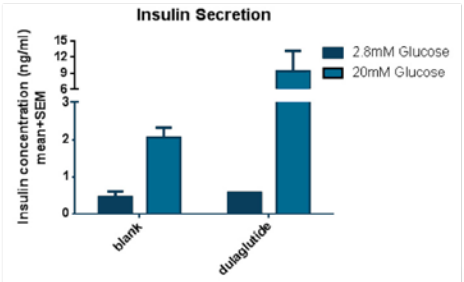
In Vitro/Ex Vivo MOA Studies

- Cell models of liver injury, e.g. APAP, ETOH
- Rat pancreas islet isolation and Glucose Stimulated Insulin Secretion assay (GSIS assay)
- Rat renal mesangial cell, glomeruli isolation, and analysis



Dithizone Stained Islet

Ex Vivo Islet Culture



GLP-1 and GLP-1 Agonist Dulaglutide Significantly Increase Insulin Secretion in Rat Islets

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Animal Models of Metabolic Diseases

Diabetes Mellitus/Obesity

- HFD+STZ induced diabetes in mice and rats
- Db/db, Ob/ob mice
- Zucker Diabetic Fatty (ZDF) Rat
- High fat diet induce obese (DIO) in mice and rats

Liver Disease

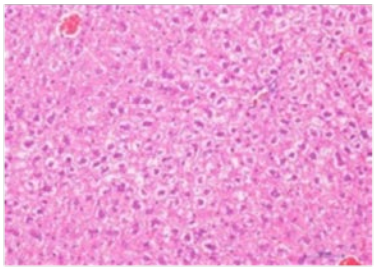
- Bile Duct Ligation (BDL) model in rats
- Carbon tetrachloride (CCL4) induced liver fibrosis in mice
- NASH model in mice and rats (MCD, HF-LMCD, HF-LMCD-CCL4, High fat-high cholesterol-fructose model)
- Drug induced liver injury (APAP) in mice
- Alcoholic Liver Disease (ALD) in mice

Renal Disease

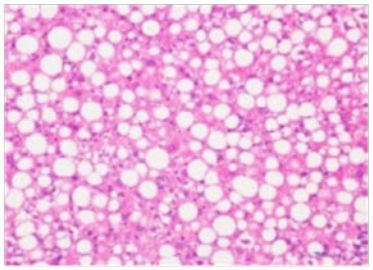
- Unilateral Ureteral Obstruction (UUO) induced kidney disease model in rats
- Uninephrectomy (Unx) Diabetic Nephropathy (DN) model in mice
- Acute Kidney Injury model in mice (Ischemic Reperfusion: AKI: acute, sub-chronic), 5/6 nephrectomy model in mice, adenine-induced kidney injury model in mice and rats

Cardiovascular disease

- Golden hamster hyperlipidemia model
- Spontaneously Hypertensive Rat (SHR)/salt induced hypertension in Dahl Rats
- Atherosclerosis model in ApoE (-/-) mice



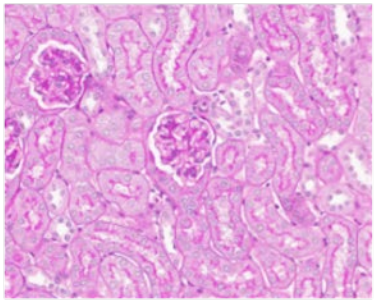
Normal Liver



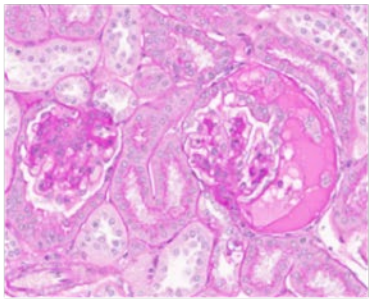
Fatty Liver

Control

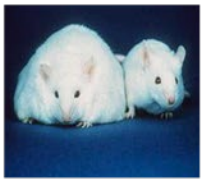
Atherosclerosis



Normal Kidney



Diabetic Nephtopathy



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