**Model Name**
Xenograft, Kidney, A-498

**Item Number**
580400

**Introduction**
The A-498 human renal carcinoma xenograft model is used to evaluate therapeutic efficacy of investigational antineoplastic agent(s) in immune compromised mice.

**Procedure Summary**
Groups of eight (8), specific-pathogen-free (SPF) female CB.17 SCID mice bred in an animal isolator (IVC racks) under SPF conditions at 22 ± 2°C are used. Viable human renal carcinoma A-498 (ATCC HTB-44) cells are injected subcutaneously into the right flank of experimental mice. Dose administrations are initiated when tumor volumes reach 100-150 mm$^3$ (Day 1). Tumor volumes and body weights are measured and recorded twice weekly over the course of the study period. Study will continue for “n” days. Therapeutic efficacy may be evaluated for Tumor Growth Inhibition (TGI), Tumor Growth Delay (TGD), or both TGI and TGD.

**Suggested Testing**
Tumor Growth Inhibition (%TGI) is determined twice weekly by the formula: 

\[ \%TGI = (1 - \frac{(Tn)}{(Cn)}) \times 100 \]

where \( Tn \) = mean tumor volume of treated group on day “n”, and \( Cn \) = mean tumor volume of control group on day “n”. Tumor Growth Delay (%TGD) is expressed as the percentage by which the treated group median tumor volume is delayed in reaching the established tumor volume endpoint compared to the controls using the formula 

\[ \frac{(T-C)}{C} \times 100 \]

where T and C are median times (days) to reach the established tumor volume endpoint for the treated and control group, respectively.

**Endpoint Parameters**
Recommended tumor volume endpoint: 1000 mm$^3$

**Study Parameters**
Tumor volume (mm$^3$) is estimated according to the prolate ellipsoid formula: 

\[ \text{Length (mm)} \times [\text{Width (mm)}]^2 \times 0.5. \]

**Reference Compound(s)**
Paclitaxel, 20 mg/kg, IV, q4d x 6

**Optional Services**
- In Vitro cell proliferation
- MTD determination
- PK and bio-analysis for plasma and tumor
- Clinical chemistries and CBC data collection
- Continuous infusion dose administration (osmotic pump)
- Tumor and organ sampling

**Literature**
The Efficacy of the Novel Dual PI3-Kinase/mTOR Inhibitor NVP-BEZ235 Compared with Rapamycin in Renal Cell Carcinoma. Daniel C. Cho et al. Clinical Cancer Research, 16(14), 3628-3638, July 2010

**Related Assay(s)** (Item # - Assay Name)
580450 - Xenograft, Kidney, ACHN

For current details about our Company address and contact information, please reference our website [http://www.pharmacologydiscoveryservices.com/company-info/](http://www.pharmacologydiscoveryservices.com/company-info/)
Modified Protocols
We will readily accommodate client-specified alterations.

Laboratory
These assays are performed at our AAALAC accredited laboratory in Taipei.

Animal Welfare
All aspects of this work is performed in general accordance with the Guide for the Care and Use of laboratory animals (National Academy Press, Washington, DC, 2011). The study protocol was approved by the Pharmacology Discovery Services IACUC and is performed with the oversight of veterinarians to assure the humane treatment of laboratory animals.

Therapeutic Response Data

Last modified July 17, 2018