Inclusion Criteria:
1. Dog, regardless of the breed and sex older than 1 year of age and weighing more than 6.9 kg
2. Dogs must have been diagnosed with aggressive Grade 2 and Grade 3, non-resectable, cutaneous mast cell tumor. Diagnosis for inclusion of study will be sampled and sent off at UC Davis to determine inclusion/exclusion.
   a. Non resectable dog is defined as either:
      i. Medically non resectable (margins would unlikely be free of tumor cells); or,
      ii. Non-resectable for the pet owner (for example, amputation would be unacceptable to the owner).
3. Dog with non-recurrent or recurrent mast cell tumor
4. Dog with non resectable measurable lesion at inclusion (i.e., longest diameter ≥ 10 mm for cutaneous tumor or with short axis diameters ≥ 15 mm for lymph nodes)
5. Dog with lesion accessible for biopsy
6. Adequate organ function:
   a. Absolute neutrophils count (ANC) ≥ 2000/mm3
   b. Platelets ≥ 100.109/L
   c. Hemoglobin ≥ 10g/dL
   d. Hematocrit ≥ 30%
   e. AST/ALT ≤ 3 x ULN
   f. Bilirubin ≤ 1.5 ULN
   g. Albumin ≥ LLN
   h. Creatinine ≤ ULN
   i. BUN ≤ ULN
   j. Urinary protein creatinine ratio UPC ≤ 1
7. Owner able and willing to comply with study visits and procedures per protocol
8. Owner able to understand, sign, and date the written informed consent form at the screening visit prior to any protocol-specific procedures performed

Exclusion criteria:
1. Dog previously treated by toceranib phosphate or any chemotherapy or radiotherapy
2. Dog with subcutaneous tumor
3. Dog with bone marrow involvement
4. Dog with major surgery within 2 weeks of treatment initiation
5. Dog with evidence of gastric bleeding
6. Dog with any previous history of kidney disease or any previous known episode of proteinuria including post vaccinal ones
7. Dog with other concomitant serious diseases (life expectancy less than 3 months)
8. Lactating or pregnant bitch, dog intended for breeding
9. Dog owned by staff associated with the study
10. Dog with any GI disease associated with an active exudative enteropathy or past history of exudative enteropathy

Previous treatment
1. Dog treated with any investigational agent within 4 weeks prior to baseline for short-acting investigational agent, and within 12 weeks prior to baseline for long-acting investigational agent
2. Dog with any vaccination within 4 weeks prior to baseline
3. Dog treated with corticosteroids, within 3 weeks of treatment initiation