

## **Growth Factor Response to mTORC1 Inhibition**

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**Introduction:** Previous studies reveal that mTORC1 inhibition reduces the size of renal angiomyolipomata and may improve lymphangiomyomatosis (LAM) in patients with tuberous sclerosis complex (TSC).

**Purpose:** We sought to look for changes in biologically relevant molecules in the blood of treated patients in hopes of identifying a signature that would correlate with therapy outcome. The purpose would be to use such a signature to determine if mTORC1 inhibition would be a valuable therapy or whether other treatments should be attempted.

**Methods:** After institutional review board approved consent was obtained, plasma was collected from willing patients at each visit. Patients were carefully monitored for their response using pulmonary function tests for patients with LAM and magnetic resonance imaging to assess the effects on the renal angiomyolipomata. To measure the plasma target proteins, we used enzyme-linked immunosorbent assays to measure vascularly active molecules in the collected and saved plasma obtained from TSC patients treated with RAD001.

**Results:** Our findings demonstrate the known elevated levels of VEGF-D in patients with LAM and that these decreased with increased duration of therapy. We also found complex changes in VEGF.

**Conclusion:** Future work will be aimed at correlating the response of these and other vascular growth factors to the degree and persistence of response of the renal angiomyolipomata.