Prognostic Markers for Metastatic Colorectal Cancer Response to TAS-102 Treatment

**Market Opportunity:**
Many metastatic colorectal (mCRC) patients are not diagnosed until later stages of the disease and become refractory to many chemotherapy drugs. Using a pharmacogenetics approach to tailor treatments to a patient’s specific genetic make up can provide patients with better outcomes and increase effectiveness of already existing drugs. Identifying those single nucleotide polymorphisms (SNPs) that influence drug metabolism can not only serve as prognostic markers for patient survival, but also inform potential drug targets.

**USC Solution:**
USC researchers have discovered a 3-gene prognostic SNPs signature that can predict mCRC patient response to TAS-102 treatment. The SNPs were found in genes involved in TAS-102 metabolism and were highly correlated with mCRC patient survival in several treatment cohort studies. This novel SNPs signature can be used to select mCRC patients who are more likely to respond to TAS-102 and provide insight for the development of novel formulations for combination treatment with TAS-102.

**Value Proposition**
- Novel prognostic markers for TAS-102 response in refractory mCRC patients
- SNP genotype testing can be easily done by standard, non-invasive PCR based diagnostics
- SNP associated genes may be potential drug targets for mCRC treatment

**Keywords:**
metastatic colorectal cancer, diagnostics, personalized medicine, single nucleotide polymorphism, pharmacogenetics, targeted therapy, oncology, biomarkers, TAS-102

**Applications**
- Prediction and prognostic mCRC patient response to TAS-102 treatment

**Stage of Development**
- Tested in a large testing cohort of metastatic colorectal cancer patients
- Available for exclusive or non-exclusive license

**Intellectual Property**
**Status:** Patent Application Filed

**Key Publication:**

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