Case #421

PACAP and PAC1R Biomarkers for Anxiety and PTSD

The healthcare and loss of productivity costs of pain and stress related disorders now exceed those of cardiovascular disease, cancer and diabetes. More than 65 million adults are affected by anxiety disorders in the United States and Europe alone and healthcare costs in the US exceed $42 billion a year. Few biological markers have been available for diagnosis of post-traumatic stress disorder (PTSD) making it hard to distinguish from other psychiatric disorders and treat appropriately. In a group of 64 people, most of whom had experienced significant trauma, women with above-average PACAP levels had PTSD symptom scores five times those of women with less-than-average PACAP levels. In addition, a variation in the gene for PACAP's receptor, which may change how that gene responds to estrogen, was also linked to PTSD risk in women only.

Applications:
- Biomarkers for PTSD, especially in women.
- New mechanism and target for PTSD therapeutics.

Advantages:
- Direct biomarkers for PTSD diagnosis.
- Guide for sex-specific diagnoses and treatment.
- Faster route to PTSD treatment.

Intellectual Property and Development Status:
US Patents 9,939,449 and 10,228,378
Looking for both licensing and industry partners for development of diagnostics

References:
Post-traumatic stress disorder is associated with PACAP and the PAC1 receptor, Ressler *et al,* PMC3046811

Inventors: