

A NEAR-IR FLUORESCENT CHEMICAL SENSOR FOR SEROTONIN

Published date: Jan. 18, 2019

Technology description

Abstract of Invention UM Disclosure Number: 19UMC039

Title: NS569: A Near-IR Fluorescent Chemical Sensor for Serotonin Innovation: Inventors at the University of Missouri have developed a chemical sensor that fluoresces in the presence of serotonin. This effect makes it useful for imaging serotonin in neurons (intracellular analyte detection).

Background: Serotonin (5-hydroxytryptamine, 5-HT) is a biologic amine and a crucial neurotransmitter in the central nervous system involved in regulating emotions, mood, and sense of well-being.

Decreased serotonin levels have been associated with a range of neuro-psychiatric disorders like anxiety disorder, bipolar disorder, and clinical depression, making Selective Serotonin Reuptake Inhibitors (SSRIs) the first line agents to elevate serotonin levels in the body, and also the most prescribed class of psychotropic medications. Conventional molecular imaging tools are oftentimes faced with certain drawbacks like limited selectivity and sensitivity, allowing for only indirect observation of serotonin, or requiring the use of invasive biomedical devices. The current invention enables direct serotonin imaging and quantitation using a small molecule with NIR fluorescence. Its high affinity for serotonin makes it a preferred sensor.

Application area

Intracellular detection of Serotonin in neurons

Advantages

High selectivity for Serotonin

Institution

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