TrkB receptor inhibitor for treatment of mood disorder-associated cognitive deficits

Technology #cu15255

This technology identifies the receptor tropomyosin kinase B (TrkB) as a target for treatment of both the emotional and cognitive deficits associated with mood disorders.

Unmet Need: Method to treat executive cognitive defects in mood disorders

Executive cognitive deficits that accompany the emotional symptoms of psychiatric mood disorders are not appropriately addressed by current treatments, and can persist even when the depressive symptoms are in remission. Early life stress (ELS) is an important risk factor for numerous psychiatric illnesses, including mood and anxiety disorders, and has been implicated in modifications in gene expression via epigenetic mechanisms.

The Technology: Treatment of cognitive deficits in mood disorders via TrkB inhibition

Early life stress (ELS)-induced disorders have been associated with epigenetic changes affecting agonists for the tropomyosin kinase B (TrkB) receptor signaling pathway, whose upregulation plays a significant role in these illnesses. This technology identifies the TrkB signaling pathway as a target for the prevention and reversal of executive cognitive deficits. This technology could be used to develop surgical/electrical interventions and/or behavioral therapies to improve patient outcomes for those suffering from ELS-induced deficits and related illnesses.

Elimination of cognitive deficits by TrkB inhibition has been confirmed in a mouse model.

Applications:

- Treatment for cognitive deficits related to mood disorders
- Combination therapy for mood disorders to alleviate full spectrum of symptoms
- Preventative method of early life stress-induced psychiatric disorders
Advantages:

- Addresses cognitive deficits in mood disorders, unresolvable by current mood disorder treatments
- Prevents transmission of mood disorder-related cognitive deficits from parent to child
- Reverses early life stress-induced mood disorders during adolescence
- Can decrease likelihood of relapse into depression

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Related Publications:

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