HTS to identify small molecule inhibitors of 5-HT2cR:PTEN interaction
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Mental health disorders (addiction, depression, anxiety, and psychosis) contribute appreciably to the global burden of disease. Available medications serve as important therapeutic support for remission, but new approaches are needed to improve efficacy, sustainability of recovery, and reduced side effects. A contemporary understanding of regulatory processes and protein complexes in neurotransmitter systems suggest that protein-protein interactions may serve as potential drug targets. A growing body of evidence suggests that a few amino acids at the interface ('hot-spot') in transient protein-protein interactions contribute to the majority of the binding energy. As such, small molecule inhibitors that target such 'hot-spots' at the protein-protein interface will enable the functional disruption of large protein complexes. We propose to identify and characterize reversible inhibitors for an identified hot-spot in the serotonergic system, a primary system implicated in underlying psychiatric disorders.