

Enveric Biosciences Inc - Chemical Library Catalogue Brochure: *Novel MDMA Derivatives (EMD) Series*

Enveric's Novel MDMA Derivatives:

The twenty compounds within this series are novel MDMA derivatives separated into three subgroups: Strong 5-HT_{2A} binding (EMDS), Weak 5-HT_{2A} binding (EMDW) or No 5-HT_{2A} binding (EMDN). Each compound maintains an expanded receptor binding profile.

Background:

Currently, there are two FDA-approved drugs for the treatment of PTSD, the Selective Serotonin Reuptake Inhibitors (SSRIs) sertraline (sold by others as Zoloft[®]) and paroxetine (sold by others as Paxil[®]). Venlafaxine (sold by others as Effexor[®]), a Serotonin/Norepinephrine Reuptake Inhibitor (SNRI) has also been used to treat this severe disorder. Though somewhat effective, these medications have notable side-effects and limited long-term success.

MDMA has been granted breakthrough status by the FDA for the treatment of PTSD. MDMA does not function as a SSRI or SNRI. Novel MDMA derivatives with low or no binding to 5-HT_{2A} receptor are proposed to have significant market value.

Key Features of Enveric's Novel MDMA Derivatives:

- EMDS-01 to -08 show strong binding to 5-HT_{2A}; Literature indicates activation of 5-HT_{2A}, commonly linked to hallucination in humans, also induces neuroplasticity
 - EMDW-01 to -05 show weak 5-HT_{2A} binding
 - EMDN-01 to -07 show no 5-HT_{2A} binding
 - Each of the twenty novel MDMA derivatives show unique binding profiles to receptors of validated therapeutic potential:
 - All EMDS, EMDW and EMDN-01 to -06 demonstrate binding to 5-HT_{1A}, a receptor activated by approved anxiolytic Bupirone
 - All EMDS, EMDW, EMDN-01 and -02 show binding to 5-HT_{2C}, a receptor activated by the approved antiepileptic drug Flenfluramine
 - All EMDS, EMDW-03 to -05, EMDN-03, -04 to -07 bind the alpha-2A adrenergic receptor, a receptor activated by the approved ADHD drug Guanfacine
 - EMDS-05 to -08, EMDW-04, EMDN-03, -05 and -06 bind the dopamine D₃ receptor, a target activated by the atypical antipsychotic Aripiprazole
 - EMDW-03 binds SERT and NET, potentially demonstrating SNRI activity
 - EMDS-04 and -08, EMDW-02 and -05, EMDN-04 to -07 bind DAT, NET or both transporters potentially demonstrating unique dopamine and norepinephrine reuptake activity
-

Summary of Binding Data:

Compound ID	Specific Target Receptor Binding							
	SERT	5-HT1A	5-HT2A	5-HT2C	alpha2A	D3	DAT	NET
EMDS-01		✓✓✓	✓✓	✓✓✓	✓			
EMDS-02		✓✓✓	✓✓✓	✓✓✓	✓			
EMDS-03		✓✓✓	✓✓✓	✓✓✓	✓✓✓			
EMDS-04		✓✓✓	✓✓✓	✓✓✓	✓✓		✓✓✓	
EMDS-05		✓✓✓	✓✓	✓✓✓	✓✓	✓✓		
EMDS-06		✓✓✓	✓✓	✓✓✓	✓✓✓	✓✓✓		
EMDS-07		✓✓✓	✓✓	✓✓	✓✓	✓✓✓		
EMDS-08		✓✓✓	✓✓	✓✓✓	✓	✓	✓✓✓	✓✓✓
EMDW-01		✓✓✓	✓	✓✓				
EMDW-02		✓✓✓	✓	✓✓			✓	
EMDW-03	✓✓✓	✓✓✓	✓	✓	✓✓✓			✓
EMDW-04		✓✓✓	✓	✓	✓	✓		
EMDW-05		✓✓✓	✓	✓	✓✓✓		✓✓✓	✓
EMDN-01		✓✓✓		✓				
EMDN-02		✓✓✓		✓				
EMDN-03		✓✓✓			✓	✓✓✓		
EMDN-04		✓✓					✓✓✓	✓
EMDN-05		✓✓✓			✓	✓	✓✓✓	✓
EMDN-06		✓✓			✓✓✓	✓	✓✓✓	✓
EMDN-07				✓	✓		✓✓✓	✓✓✓