Endogenous hallucinogens

2000:

DMT: The Spirit Molecule
Rick Strassman's hypothesis for endogenous DMT
http://www.rickstrassman.com/?q=node/9

2004:

Endogenous psychoactive tryptamines reconsidered: an anxiolytic role for dimethyltryptamine
summary:
Summary: The presence of the potent hallucinogenic psychoactive chemical N,N-dimethyltryptamine (DMT) in the
human body has puzzled scientists for decades. Endogenous DMT was investigated in the 1960s and 1970s and it was proposed that DMT was involved in psychosis and schizophrenia. This hypothesis developed from comparisons of the blood and urine of schizophrenic and control subjects. However, much of this research proved inconclusive and conventional thinking has since held that trace levels of DMT, and other endogenous psychoactive tryptamines, are insignificant metabolic byproducts. The recent discovery of a G-protein-coupled, human trace amine receptor has triggered a reappraisal of the role of compounds present in limited concentrations in biological systems. Interestingly enough, DMT and other psychoactive tryptamine hallucinogens elicit a robust response at the trace amine receptor. While it is currently accepted that serotonin 5-HT2A receptors play a pivotal role in the activity of hallucinogenic/ psychedelic compounds, we propose that the effects induced by exogenous DMT administration, especially at low doses, are due in part to activity at the trace amine receptor. Furthermore, we suggest that endogenous DMT interacts with the TA receptor to produce a calm and relaxed mental state, which may suppress, rather than promote, symptoms of psychosis. This hypothesis may help explain the inconsistency in the early analysis of endogenous DMT in humans.
http://www.tripzine.com/pit/DMT_TA_anxiolytic.pdf

2007:

A Methodology for Studying Various Interpretations of the N,N-dimethyltryptamine-Induced Alternate Reality

Center for Evolution, Complexity, and Cognition, Vrije Universiteit Brussel
Computer Science Department, University of California at Santa Cruz

Abstract-N,N-dimethyltryptamine, or DMT, is an endogenous psychoactive chemical that has been shown through repeated human subject experimentation to provide the subject with a perception of an 'alternate reality'. When administered a sufficient DMT dose, subjects have reported the presence of intelligent beings that do not appear to be the projections of their subconscious in the Freudian sense. Furthermore, and of particular interest to this article, many subjects believe that the perceived alternate reality is

persistent in that it exists irrespective of their subjective momentary perception. Past research into the DMT-induced alternate reality comes solely from subject testimonies and to date, no analysis has been conducted to understand the objective aspects of these extraordinary subjective claims. This article provides a methodology for studying the nature of the DMT-induced alternate reality by means of various simple information theory experiments. These experiments can be used to test which of the presented interpretations of the DMT-induced alternate reality appear most plausible.
http://www.scientificexploration.org/journal/jse_21_1_rodriguez.pdf

2008:

Discussion and rebuttal of Rick Strassman's hypothesis for endogenous DMT
http://www.singingtotheplants.com/2008/06/endogenous-dimethyltryptamine/

2009:

The Hallucinogen *N,N*-Dimethyltryptamine (DMT) Is an Endogenous Sigma-1 Receptor Regulator The sigma-1 receptor is widely distributed in the central nervous system and periphery. Originally mischaracterized as an opioid receptor, the sigma-1 receptor binds a vast number of synthetic compounds but does not bind opioid peptides; it is currently considered an orphan receptor. The sigma-1 receptor pharmacophore includes an alkylamine core, also found in the endogenous compound *N,N*-dimethyltryptamine (DMT). DMT acts as a hallucinogen, but its receptor target has been unclear. DMT bound to sigma-1 receptors and inhibited voltage-gated sodium ion (Na^+) channels in both native cardiac myocytes and heterologous cells that express sigma-1 receptors. DMT induced hypermobility in wild-type mice but not in sigma-1 receptor knockout mice. These biochemical, physiological, and behavioral experiments indicate that DMT is an endogenous agonist for the sigma-1 receptor.

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2947205/

2010: published 2012

A critical review of reports of endogenous psychedelic N, N-dimethyltryptamines in humans 1955-2010
Steven A. Barker, Ethan H. Mcllhenny, and Rick Strassman
Barker appears as a participant in DMT the spirit molecule, the movie
http://thespiritmolecule.com/html/index.php

The authors of this critical review note that early studies of endogenous DMT in humans assumed the presence of DMT implied some form of mental pathology. "Numerous studies subsequently reported finding one or more DMT compounds in control groups as well as patients…. A definitive link has not yet been demonstrated between the blood and/or urine levels of these compounds and any psychiatric diagnosis."

The review finds that "the preponderance of the mass spectral evidence proves, to a scientific certainty, that DMT and HDMT are indeed endogenous and can be measured in human body fluids."

"Many early studies attempted to determine if diet or gut bacteria were responsible for positive results. Sterilization of the gut with antibiotics or feeding subjects special diets had no effect on these studies' results. In addition,
no evidence suggested that medication(s) played a role. More recently. Karkkainen et al isolated significant quantities of HDMT from stool samples, and hypothesized that HDMT may be synthesized by cells of the intestinal epithelium or the kidney, but not by gut flora."

The tissue source or sources of these compounds in humans remains unknown.

The enzyme responsible for DMT synthesis is indole-Nmethyltransferase (INMT) Recent studies by Cozzi et al using a fluorescent antibody to INMT and confocal microscopy, have identified INMT in spinal cord, brain, retina, and pineal.

The authors believe the search for endogenous psychedelic tryptamines should turn towards other human tissues than blood, urine and
CSF; that is, solid organs such as adrenal, brain, lung, pineal, retina, and other tissues in which INMT activity has been noted using molecular biology tools.

We may finally find an answer to the question: 'Why do humans produce endogenous psychedelics?' The research thus far is
limited but there are many possibilities awaiting further inquiry.

http://www.ncbi.nlm.nih.gov/pubmed/22371425

Appendix C on Pg 150 of the following reference provides a copy of
A critical review of reports of endogenous psychedelic N, N-dimethyltryptamines in humans 1955-2010
http://www.neip.info/downloads/McIlhenny_Ayahuasca.pdf

2012:

August 2012: PhD Dissertation by Ethan Hamilton McIlhenny

AYAHUASCA CHARACTERIZATION,
METABOLISM IN HUMANS,
AND RELEVANCE TO ENDOGENOUS N,N-DIMETHYLTRYPTAMINES
http://www.neip.info/downloads/McIlhenny_Ayahuasca.pdf

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http://metatoninresearch.org/
references:
For further information, visit: www.rickstrassman.com,
http://www.cottonwoodresearch.org

or visit: Anthony Peake's website: http://www.anthonypeake.com

and David Wilcock at: http://divinecosmos.com/

and Iona Miller's website: http://neurotheology.50megs.com/whats_new_11.html

and James Oroc's The Tryptamine Palace webpage: http://www.dmtsite.com/

and Cliff Pickover's website: http://sprott.physics.wisc.edu/pickover/pc/dmt.html