



General structure of modified B-PEA analogs (see Table 1)

COMMON NAME	CHEMICAL NAME
Tyramine	4-hydroxy-phenethylamine
Dopamine	3,4-dihydroxy-phenethylamine
Epinephrine	Beta-3,4-trihydroxy-N-methyl-phenethylamine
Amphetamine	Alpha-methyl-phenethylamine
Methamphetamine	N-methyl-(alpha-methyl-phenethylamine)
Ephedrine	N-methyl-beta-hydroxy-(alpha-methyl-phenethylamine)
Methcathinone	N-methyl-beta-keto-(alpha-methyl-phenethylamine)
Bupropion	3-chloro-N-tert-butyl-beta-(alpha-methyl-phenethylamine)
Phentermine	a,a-dimethyl-phenethylamine
Mescaline	3,4,5-trimethoxy-phenethylamine
MDMA	3,4-methylenedioxy-N-methyl-(alpha-methyl-phenethylamine)

Now that is some list! Not all of those compounds have a place in weight loss but surely anyone with any knowledge about anything knows that all of those compounds are “effective” at what they are meant to do (even if the effects are quite different among them).

So... what would happen if we could somehow “interfere” with that annoying and pesky monoamine oxidase enzyme that prevents our naturally occurring, fully DSHEA compliant and best of all, totally legal goodie, that being B-PEA from being “deactivated” before any significant amount of it hits the brain after it is ingested? Yeah... well I was wondering the same thing myself actually!

This first thing I had to do was find a DSHEA compliant and effective way to block that pesky enzyme that metabolizes B-PEA. This was not too difficult to accomplish. But the issue is that some of these naturally occurring enzyme blockers have some undesirable effects when you take them at a dose high enough to “get them working.” Let’s take a look at what I had to work with. Hordenine (which is also a derivative of B-PEA) is a decent MAO enzyme blocker and is naturally occurring in grains, sprouting barley, and certain grasses. It will work for what we want it to do. The problem with hordenine is that in order for it to really work well, you need to take a lot of it. And hordenine tends to make people go “poopy pants” if you know what I mean. The “doo doo” side effect is clearly noticed in horses given too much hordenine whereby said horses “defecated within 60 seconds” after administration of hordenine (see Equine Vet J. 1990 Nov;22(6):437-41 for the full write up). So while I might want to use some hordenine (and a lot of fat loss supplements contain this anyhow for its adrenergic effects) I need to be careful not to make it my “only” enzyme blocker or else people might be “touching cloth” after they use the product – catch my drift? Another interesting enzyme blocker is found in the herb Evodia rutaecarpa. Evodiamine, which is a PPAR modulator/Vanilloid receptor compound used in a cornucopia of fat loss products is NOT the chemical that interests me here. There are a ton of companies selling “Evodia” herb standardized for evodiamine content for the PPAR/vanilloid effects – but since this is not what I was working towards (because evodiamine is not an MAO inhibitor) locating someone to provide samples and then kilograms of the herb standardized to contain the moiety that I did desire was a royal pain. The extract of this herb I wanted to examine is called “1-methyl-2-undecyl-4(1H)-quinolone” and it seems to work VERY well at inhibiting this pesky little enzyme (see Chem Pharm Bull, 2003 Apr;51(4):409-11. for more information). However, it was and still is a pain in the neck to standardize Evodia fruit and herb for this compound when everyone else wants ‘evodiamine’ as the prime constituent. Another herb that I am sure you are all familiar with (but that you might not be

aware of as useful in block MAO enzyme) is Gingko biloba. Extracts from Gingko biloba are POTENT inhibitors of MAO enzymes (see J Neurochem, 2005 Apr;93(1):94-104. for more information) and are of course, quite easily attainable. So far, we have three pretty good MAO inhibiting candidates to “play with” in conjunction with B-PEA. However, I was not content with this. I wanted something unique and something as a back up. So I am going to introduce two relatively new herbs into the sports nutrition arena right now that are indeed, exquisitely potent MAO inhibitors. Those being Uncaria rhynchophylla and Sinofranchetia chinensis, which have been in the health/nutrition market for a long time for other reasons anyhow.

Uncaria rhynchophylla – *The Ancient Chinese Secret!*

Uncaria rhynchophylla is an herb that my wife (who is Chinese) actually brought to my attention for reasons not germane to B-PEA and MAO inhibition. This herb has been used in China for centuries as a “cognitive enhancer” as well as to treat strokes. While dredging up information about this herb, I noticed that some of its active ingredients seemed to really interfere with the MAO enzymes quite well (see J Ethnopharmacol. 2005 Aug 22;100(1-2):216-20 and Phytomedicine. 2003 Nov;10(8):650-6. for more information) This is probably how this herb came to be known for its cognitive enhancing effects because suppressing MAO type B enzyme actually increases cognition (especially in people suffering from Parkinson’s and Alzheimer’s Diseases!). Another study actually demonstrates that this herb has a “calming effect” in mammals (J Ethnopharmacol. 2006 May 26). The constituents of this herb that I am interested in are probably the Hirsutine, Rhynchophylline, Isorhynchophylline and Dihydrocorynantheine. This is just one of those herbs that are really good for you anyhow. It has a slight relaxing effect and a quick scan of the published, independent research shows this herb is a fantastic free radical scavenger/antioxidant, it possesses significant neuroprotective effects and can actually lower blood pressure! My wife’s grandmother uses this stuff and has been for 3 decades. She is close to 90 years old, blind with cataracts and stooped over with a large hump from osteoporosis. She is also as sharp as a tack and I am told she is as quick witted today as she was in decades past. While it was fairly easy to obtain a small, personal amount of this herb from a Chinese pharmacy, sourcing it in large amounts was going to be difficult if I indeed, liked the effects I saw with this when combined with B-PEA.

Sinofranchetia chinensis – *Not-So-Ancient Chinese Secret!*

Inhibition of MAO enzyme by the herb Sinofranchetia chinensis is currently being studied (and has been for about six years now) in Chinese medicine at the State Key Laboratory of Pharmaceutical Biotechnology, Institute of Pharmaceutical Biology and Phytochemistry, Nanjing University, China. Currently, it is believed that two alkaloids from this herb, Aliquiritigenin and Isoliquiritigenin, are responsible for the MAO enzyme inhibition effect (see Acta Pharmacol Sin. 2000 Oct;21(10):949-53. for further information). There is not a lot of information published about this herb but in speaking with a Chinese herbalist doctor who emigrated from Shandong Province in China and now lives in Quincy, Massachusetts about this herb, he told me that this plant is sometimes used to treat gouty arthritis and that it works really well at this. That was the link I needed because this herb is also an inhibitor of another enzyme called xanthine oxidase. In humans, xanthine oxidase is normally found in the liver and not free in the blood. During severe liver damage, xanthine oxidase is released into the blood, so a blood assay for this enzyme is a way to determine if liver damage has happened. Additionally, because xanthine oxidase provides a metabolic pathway for uric acid formation, the xanthine oxidase inhibitors are indeed (e.g. allopurinol) used in the treatment of gout. However, I am not interested in this for it’s liver protective or gout treating effects. I am far more interested again, in what it can do to stop the enzyme MAO.