

IDK[®] Casomorphin/Gliadorphin Peptides



LC-MS/MS determination of 8 casomorphin and gliadorphin peptides in urine

- ▶ Determination of the inability to digest gluten and casein peptides
- ▶ Detection of different classes of gluten and casein peptides
- ▶ Indication for autism, schizophrenia, Asperger syndrome, ADD, dyslexia, chronic fatigue, fibromyalgia, depressions ...

Casomorphin and Gliadorphin LS-MS/MS Kit

Exorphins are bioactive peptides which can react with opiate receptors. These peptides are derived from the incomplete hydrolysis of the milk protein casein and the wheat protein gluten and gliadin. Casomorphin (BCM7 from casein) and gliadorphin-7 (from gluten) have been widely studied and are linked to gastrointestinal, neurological, and neuro-developmental disorders.



These short peptides are usually broken down by the enzyme dipeptidyl-peptidase IV (DPP-IV). In people with autism, schizophrenia and other neurological disorders, either a genetic deficiency or inhibition of this enzyme, e.g. by drugs treating diabetes type 2, mercury or yeast, can occur.

Both ways, this proteolytic enzyme can't act properly and leaves incompletely digested peptides behind which are able to pass the blood-brain barrier after the uptake from the intestinal lining into the bloodstream. In the brain, these bioactive peptides can bind to opiate receptors and mimic the effects of opiate drugs like heroin and morphine. This can result in change of behavior, lack of focus and attention, sleepiness and even aggression and self-abuse.



Wheat and milk allergies are associated casomorphin/gliadorphin problems. Even if no milk or wheat allergies occur some people can still react negatively to these peptides.

Children with autism and ADHS can benefit from an elimination diet – gluten-free, casein-free (GfCf) diet. Physical and mental health can be improved.

β -casomorphin-7 is similar to gliadorphin-7 and both peptides are seven amino acids long with a beginning N-terminal Tyr-Pro with additional Pro in position 4 and 6.

	1	2	3	4	5	6	7
Casomorphin	Tyr	Pro	Phe	Pro	Gly	Pro	Ile
Gliadorphin	Tyr	Pro	Gln	Pro	Gln	Pro	Phe

This test is superior to any other tests because no nutritional regimen, e. g. abandonment of soy products, prior to sample collection is required.

Specimen requirements

Ten (10) ml of the first morning urine should be collected before food and drink. Please use our urine stabilization container (DZ9030UT).

Which peptides can be detected with the **IDK®** LC-MS/MS method?

Gluten	Exorphin	Amino acid sequence
Glutein	Gluten Exorphin A5	Gly-Tyr-Tyr-Pro-Thr
	Gluten Exorphin B5	Tyr-Gly-Gly-Trp-Leu
	Gluten Exorphin C	Tyr-Pro-Ile-Ser-Leu
Gliadin	Gliadorphin	Tyr-Pro-Gln-Pro-Gln-Pro-Phe

Milk protein	Exorphin	Amino acid sequence
β-Casein	β-Casomorphin 3	Tyr-Pro-Phe
	β-Casomorphin 4	Tyr-Pro-Phe-Pro
	β-Casomorphin 4, amide	Tyr-Pro-Phe-Pro-NH ₂
	β-Casomorphin 7	Tyr-Pro-Phe-Pro-Gly-Pro-Ile

Assay specifications

The **IDK® Casomorphin/Gliadorphin Peptides Kit (KM8000)** contains all reagents needed for 100 tests inclusive calibrators and controls. The urine stabilization containers (**DZ9030UT**) have to be ordered separately.

IDK® Casomorphin/Gliadorphin Peptides	
Matrix	Stabilized urine
Sample volume	1 ml
Test principle	LC-MS/MS
Analysis time	15 min
Flow rate	gradient
Mode	MRM
Polarity	ESI positive
Tests	100
Cat. No.	KM8000



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