Smelling Asparagus In Urine

Nencki's main scientific interest concentrated on urea synthesis, the chemistry of purines and biological oxidation of aromatic compounds. He was also interested in the structure of proteins, enzymatic processes in the intestine and bacterial biochemistry. One of his achievements was for example demonstration that urea is formed in the organism from amino acids rather than being preformed on a protein molecule and that it is accompanied by binding of carbon dioxide. c4dab9d94f He proposed that the synthesis of fatty acids proceeds stepwise, by a gradual condensation of two-carbon-atom fragments and that oxidation of fatty acids occurs by splitting into two-carbon units. c4dab9d94f The petai tree can grow to about 30 metres. It bears flowers in a light bulb-shaped mass at the end of long stalks. The flowers secrete a nectar that attracts bats and other pollinators. The fruits emerge as long, twisted, translucent pods in a cluster of seven or eight pods. When those pods are mature, within them will reside the petai beans or seeds. c4dab9d94f == Physiology == c4dab9d94f == Biological role == c4dab9d94f == Work == c4dab9d94f DMS originates primarily from DMSP, (dimethylsulfoniopropionate), a major secondary metabolite in some marine algae. DMS is the most abundant biological sulfur compound emitted to the atmosphere. Emission occurs over the oceans by phytoplankton. c4dab9d94f In 1877 while working at the University of Berne he discovered rhodanine via a reaction between ammonium rhodanide (in modern chemistry ammonium thiocyanate) and chloroacetic acid in water. c4dab9d94f

Methanethiol It is a colorless flammable gas with a distinctive putrid smell. Methanethiol is the simplest thiol and is sometimes abbreviated as MeSH. methanogenesis in some anaerobic soils. Methanethiol is a byproduct of asparagus metabolism. In small amounts, it is pervasive in nature and found in certain foods, such as some nuts and cheese. The production of methanethiol in urine after eating asparagus was once Methanethiol (METH-ayn-THY-ol), also called methyl mercaptan, is an organosulfur compound with the chemical formula CH3SH. It contributes to many odors, including the emissions from pulp mills, bad breath, and flatus c4dab9d94f

== Early life and education == c4dab9d94f

Marceli Nencki analyze the cause of smell in urine following eating asparagus, which he attributed to methanethiol. He made Phenyl salicylate or salol in 1886, and introduced Wilhelm Marceli Nencki (15 January 1847 in Boczki, Zduńska Wola County – 14 October 1901 in Saint Petersburg) was a Polish chemist and medical doctor who lived in Congress Poland and other parts of the Russian Empire c4dab9d94f

== Isolation and biosynthesis == c4dab9d94f

Parkia speciosa It lingers in the mouth and body. Like asparagus, it contains certain amino acids that give a strong smell to one's urine, an Parkia speciosa, the bitter bean, twisted cluster bean, sator bean, stink bean, or petai is a plant of the genus Parkia in the family Fabaceae. strong smell is very pervasive. It bears long, flat edible beans with bright green seeds the size and shape of plump almonds which have a rather peculiar smell, similar to, but stronger than that of the shiitake mushroom, due to sulfur-containing compounds also found in shiitake, truffles and cabbage c4dab9d94f

== Description == c4dab9d94f The molecule is tetrahedral at the carbon atom, like methanol. It is a weak acid, with a pKa of ~10.4, but is about a hundred thousand times more acidic than methanol. The colorless salt can be obtained by treatment with sodium methoxide: c4dab9d94f Marine phytoplankton produce dimethyl sulfide, and DMS is also produced by bacterial cleavage of extracellular DMSP. This may be an adaptive trait, as the algae can use the resulting clouds to disperse themselves around the world. DMS has been characterized as the "smell of the sea", though... c4dab9d94f

Urinalysis The urine of diabetics Urinalysis, a portmanteau of the words urine and analysis, is a panel of medical tests that includes physical (macroscopic) examination of the urine, chemical evaluation using urine test strips, and microscopic examination. Macroscopic examination targets parameters such as color, clarity, odor, and specific gravity; urine test strips measure chemical properties such as pH, glucose concentration, and protein levels; and microscopy is performed to identify elements such as cells, urinary casts, crystals, and organisms. Transient changes in urine odor can occur after consuming certain foods, most notably asparagus. dehydrated and the urine is concentrated c4dab9d94f

== Background == c4dab9d94f Urine plays an important role in the earth's nitrogen cycle. In balanced ecosystems, urine fertilizes the soil and thus helps plants to grow. Therefore, urine can be used as a fertilizer. Some animals mark their territories with urine. Historically, aged or fermented urine (known as lant) was also used in gunpowder production, household cleaning, leather tanning, and textile dyeing. c4dab9d94f The material was originally isolated from an aqueous extract of Asparagus officinalis, a spring vegetable. It is a derivative of the cyclic disulfide organic compound 1,2-dithiolane with a carboxylic acid functional group bound to carbon-4 of the heterocycle. Biosynthetic studies revealed that asparagusic acid is derived from isobutyric acid. Asparagusic acid is a colorless solid with a melting point of 75.7–76.5 °C, higher than that of the corresponding dithiol: dihydroasparagusic acid (or γ,γ-dimercaptoisobutyric acid), at 59.5–60.5 °C. c4dab9d94f

Urine presence of amino acids in urine (diagnosed as maple syrup urine

disease) can cause it to smell of maple syrup. Eating asparagus can cause a strong odor Urine is the fluid excreted by the kidneys of vertebrates to clear the bloodstream of excess water and metabolic by-products including urea, uric acid, and creatinine c4dab9d94f

Danielle Reed began her training as a scientist in the laboratory of Stephen Woods at the University of Washington, studying the role of hormonal signals on food intake in rodents. She did her doctoral dissertation with Judith Rodin at Yale University and Mark Friedman (scientist)[1] at the Monell Chemical Senses Center, focusing on how rodent metabolism changes in response to short term exposure to high-fat diets. As a postdoctoral fellow in the laboratory of Arlen Price at the University of Pennsylvania, she learned human genetics, focusing on mapping of genes for human obesity and taste using family-based linkage methods. c4dab9d94f

Asparagus 9 million tonnes, led by China with 87% of the total. Asparagus (Asparagus officinalis) or garden asparagus is a perennial flowering plant species in the genus Asparagus native to Eurasia. Widely cultivated Asparagus (Asparagus officinalis) or garden asparagus is a perennial flowering plant species in the genus Asparagus native to Eurasia. In 2024, world production of asparagus was 8. Widely cultivated as a vegetable crop, its young shoots are used as a spring vegetable c4dab9d94f

Asparagusic acid is found in asparagus and is believed to be the metabolic precursor to odorous sulfur compounds responsible for the distinctive smell of urine which has Asparagusic acid is an organosulfur compound with the molecular formula C4H6O2S2 and systematically named 1,2-dithiolane-4-carboxylic acid. It is found in asparagus and is believed to be the metabolic precursor to odorous sulfur compounds responsible for the distinctive smell of urine which has long been associated with eating asparagus. The molecule consists of a heterocyclic disulfide functional group (a 1,2-dithiolane) with a carboxylic acid side chain c4dab9d94f

In mammals, urine travels from the kidneys via the ureters to the bladder for storage until urination. Placental mammals expel urine from the bladder through the urethra, whereas other vertebrates urinate through the cloaca. c4dab9d94f == Structure and reactions == c4dab9d94f DMS is also produced naturally by bacterial transformation of dimethyl sulfoxide (DMSO). c4dab9d94f

Dimethyl sulfide It is a breakdown product of dimethylsulfoniopropionate (DMSP), and is also produced by the bacterial metabolism of methanethiol. It is a component of the odor produced from cooking of certain vegetables (notably maize, cabbage, and beetroot) and seafoods. It is also an indication of bacterial contamination in brewing. Beetroot, asparagus, cabbage, maize and seafoods produce dimethyl Dimethyl sulfide (DMS) or methylthiomethane is an organosulfur compound with the formula (CH3)2S. as a food additive to impart a savory flavor; in such use, its concentration is

low. It is the simplest thioether and has a characteristic disagreeable odor. It is a flammable liquid that boils at 37 °C (99 °F) c4dab9d94f

== Occurrence and production == c4dab9d94f

S-Methyl thioacrylate When asparagus is digested, its characteristic asparagusic acid is broken down S-Methyl thioacrylate is an organosulfur compound and a thioester with the chemical formula CH2=CHCOSCH3. characteristic odor in the urine of some individuals after consuming asparagus. It is the S-ester formed between acrylic acid and methanethiol c4dab9d94f

Danielle Reed Chemical Senses Danielle Renee Reed is an American geneticist employed at the Monell Chemical Senses Center in Philadelphia, Pennsylvania. "Excretion and Perception of a Characteristic Odor in Urine after Asparagus Ingestion: A Psychophysical and Genetic Study". R. (2010). She is most notable for her papers regarding genetic variation in taste and obesity in mice and humans c4dab9d94f

Reed has a Ph.D. in psychology from Yale University, which she attended from 1984 to 1990. c4dab9d94f == Botanical description == c4dab9d94f Among Nencki's greatest achievements was his study on the chemical structure of haemoglobin. He identified haemopyrrole... c4dab9d94f Human urine and feces, called human waste or human excreta, are managed via sanitation systems. Livestock urine and feces also require proper management if the livestock population density is high. c4dab9d94f