QJ1310100
Laboratoř Metalomiky a Nanotechnologií

Vás zve na seminář:

Optimalizace separace a detekce putrescinu pomocí HPLC s derivatizací ninhydrinem

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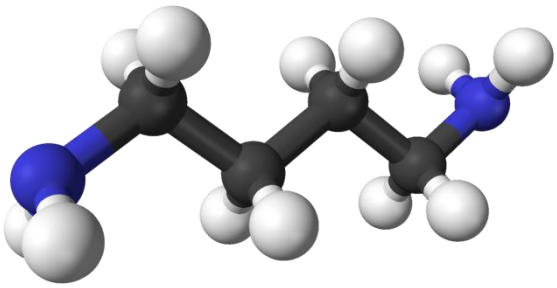
Abstrakt

Putrescine, or **tetramethylenediamine**, is a foul-smelling organic chemical compound $NH_2(CH_2)_4NH_2$ (1,4-diaminobutane or butanediamine) that is related to cadaverine; both are produced by the breakdown of amino acids in living and dead organisms and both are toxic in large doses. The two compounds are largely responsible for the foul odor of putrefying flesh, but also contribute to the odor of such processes as bad breath and bacterial vaginosis.[5] They are also found in semen and some microalgae, together with related molecules like spermine and spermidine. Putrescine is produced on an industrial scale by hydrogenation of succinonitrile, which is produced by addition of hydrogen cyanide to acrylonitrile.[9] Putrescine is reacted with adipic acid to yield the polyamide Nylon-4,6, which is marketed by DSM under the trade name Stanyl. Biotechnological production of putrescine from renewable feedstock is a promising alternative to the chemical synthesis. A metabolically engineered strain of *Escherichia coli* that produces putrescine at high titer in glucose mineral salts medium has been described.[11]



Putrescine attacks decarboxylated *S*-adenosyl methionine and gets converted to spermidine. Spermidine in turn attacks another decarboxylated *S*-adenosyl methionine and gets converted to spermine.

Putrescine is synthesized in small quantities by healthy living cells by the action of ornithine decarboxylase. The polyamines, of which putrescine is one of the simplest, appear to be growth factors necessary for cell division.

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