

Coenzyme A

Under construction

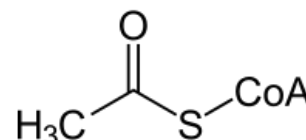
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This article has been translated from WikiSkripta; ready for the **editor's review**.

Coenzyme A, referred to in the literature as HSCoA or just CoA, belongs to the group-transferring enzymes.

Its ability to transfer groups is used by ``synthetases, which generate activated acyls, i.e. acyl-CoA, the best known of which is acetyl-CoA during the hydrolytic splitting of ATP with the help of coenzyme A J. These acyl-CoAs contain a **thioester bond** in which the remainder of the carboxyl group is attached to the -SH group of coenzyme A. The important thing about acyl-CoAs is that many important reactions take place on their β -carbon (i.e. C2 acyl) thanks to the activation of hydrogens. The best known are **dehydration** in β -oxidation of fatty acids or **condensation** in the reaction of acetyl-CoA with oxaloacetate in the Krebs cycle.



Structure of Coenzyme A molecule

The vitamin precursor for coenzyme A is **pantothenic acid** (vitamin B₅), consisting of pantoic acid and β -alanine. Other structural components of coenzyme A are the biogenic amine cysteamine and adenosine-3'-phosphate-5'-diphosphate.

File:Coenzyme A beschriftet.svg

- 1: adenosine-3'-phosphate
- 2: diphosphate
- 3: pantoic acid
- 4: β -Alanine
- 5: cysteamine
- 1+2: adenosine-3'-monophosphate-5'-diphosphate
- 3+4: pantothenic acid
- 3+4+5: pantetheine

Links

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Source

- KODÍČEK, Milan. *Biochemical terms: explanatory dictionary* [online] . 1. edition. Prague : VŠCHT, 2004. 171 pp. Available from <http://147.33.74.135/knihy/uid_es-002_v1/hesla/koenzym_a.html>. ISBN 80-7080-551-X.

References

- MATOUŠ, Bohuslav, et al. *Basics of medical chemistry and biochemistry*. 1. edition. Prague : Galen, 2010. 540 pp. ISBN 978-80-7262-702-8.