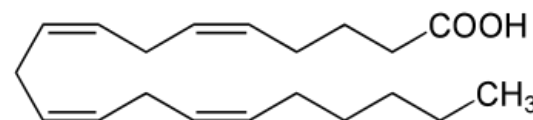


# Arachidonic acid

**Arachidonic acid** (ARA) belongs to **unsaturated fatty acids** with four double bonds (tetraenoic acids). Its general formula is  $C_{20}H_{32}O_2$ , systematic name **all-cis-5,8,11,14-eicosatetraenoic acid**, number of carbons and number and position of double bonds **20:4;5,8,11,14**, series  **$\omega 6$** . It is an important component of phospholipids in animals. It enters the body either through food (it is found especially in groundnuts - peanuts), or it is formed from the essential unsaturated fatty acid linoleic acid (18:2;9,12).



Arachidonic acid

Arachidonic acid is a precursor for the synthesis of **eicosanoids**. Eicosanoids are substances with a strong effect on the body, which include prostaglandins, prostacyclins, thromboxanes and leukotrienes. They are synthesized in various organs. Arachidonate for their synthesis is cleaved from the cell membrane by the action of *phospholipase A<sub>2</sub>*. The importance of phospholipase is shown by the fact that during the treatment of inflammatory conditions with corticosteroids, this enzyme is inhibited and thus lower production of arachidonate. Different types of eicosanoids are formed from arachidonic acid, released from cells or taken in with food, either via the **cyclooxygenase (cycling) pathway** or the **lipoxygenase pathway**.

The cyclization pathway of the conversion of arachidonic acid is blocked by acetylsalicylic acid (acetylsalicylic acid, aspirin), which thus acts as an analgesic, antipyretic, antiphlogistic and antithrombotic (affects blood platelets).

## Links

### Related articles

- Eicosanoids
- Acetylsalicylic acid

### References

- ws:Kyselina arachidonová
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- MURRAY, Robert K. *Harperova biochemie*. 4. edition. H&H, 2002. ISBN 80-7319-013-3.