

Para-Aminobenzoic Acid Encyclopedia Article

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Para-Aminobenzoic Acid

Para-aminobenzoic acid, or PABA, is most frequently encountered as an ingredient in sunscreen. Alternate names for this chemical are p-aminobenzoic acid and 4-aminobenzoic acid. Its chemical structure features a **benzene ring**. The benzene **molecule** is a six-carbon ring with alternating single and double bonds between the **carbon** atoms. These double bonds allow PABA to absorb the ultraviolet radiation carried in sunlight.

Ultraviolet radiation cannot be seen, but it is responsible for much of the damage that sunlight inflicts on people's skin. Short-term exposure to ultraviolet radiation leads to skin tanning--or burning--if a person is fair-skinned or stays in the sun too long. Long-term exposure, however, can damage the skin. The chances of premature skin aging increase due to the total amount of sun exposure during a person's life.

A more serious problem associated with long-term sun exposure is skin cancer. Ultraviolet radiation triggers genetic changes in skin cells. These changes are usually--but not Always--repaired by gene-repair mechanisms. As a result of unrepaired damage, several types of skin cancer are possible, some of which can be disfiguring or even life-threatening. When PABA is used on the skin's surface, ultraviolet rays are absorbed before they enter the skin. This absorption prevents most sun-linked damage and lessens the risk of sunburn.

Some sunscreens use chemicals that are closely related to PABA. These closely related chemicals, or derivatives, include glyceryl-p-aminobenzoate, menthyl anthranilate, padimate A, and padimate O. PABA and its derivatives may be absorbed into the top layers of the skin, but there is no evidence that they can reach the deeper layers. They are considered safe when used as directed, but certain individuals experience skin irritation when using PABA-containing sunscreens.