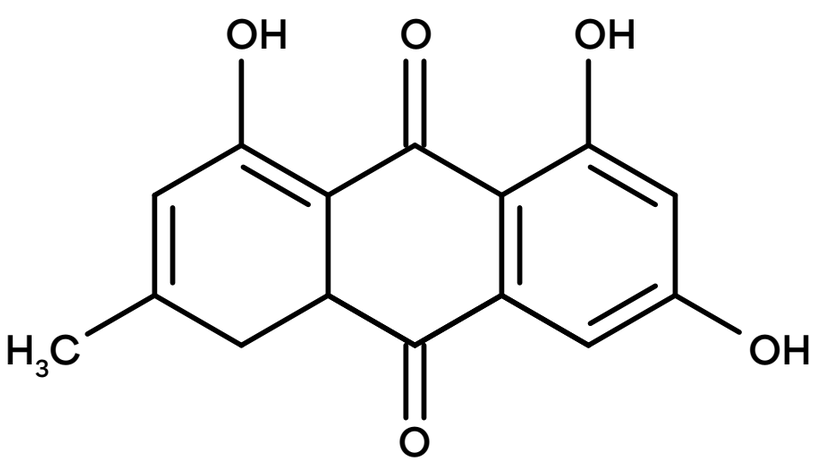
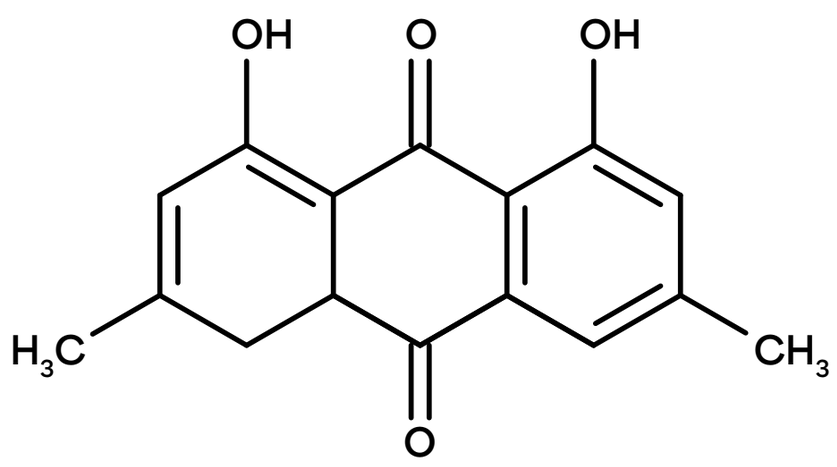
BIOFABRIQUE VIENNA

WIENER FARBEN



EMODIN



PHYSICON

EMODIN AND PHYSICON

Emodin and Physicon belong to the chemical group of anthraquinones, whose basic structure consists of three six-membered rings. They can be isolated from the roots and leaves of Japanese knotweed (Fallopia japonica).

In addition to their dyeing properties, anthraquinones are also used in medicine because of their physiological effects, for example as laxatives. Anthraquinones have been used for textile dyeing since prehistoric times.

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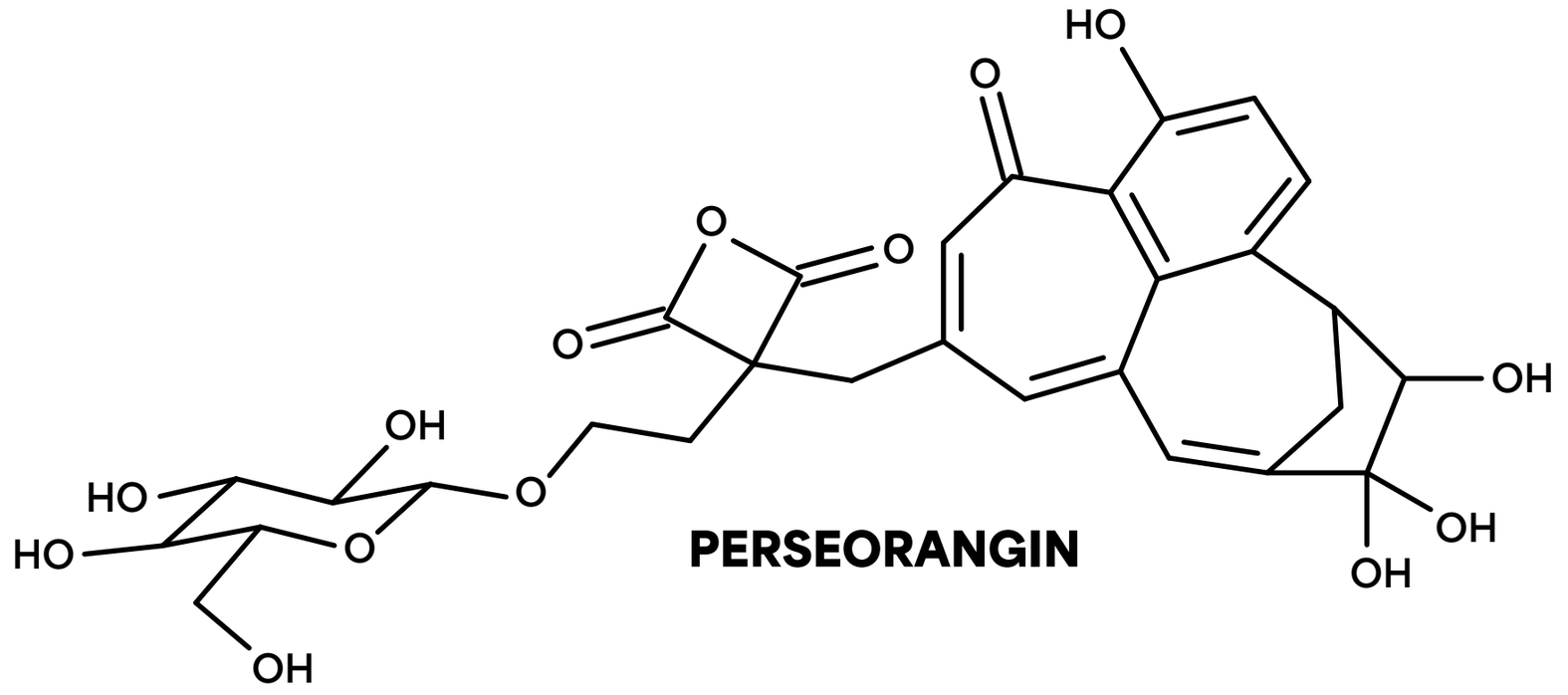

PERSEORANGIN

Perseorangin is a natural dye found in avocado seeds. Chemically, it has a relatively complex structure: it consists of several rings, a carbon chain, and a sugar. Through oxidation – for example, when an avocado seed is cut open – orange hues are produced that can be used for natural dyeing. Plant enzymes known as polyphenol oxidases are involved in this process.

The same chemical reaction can also be observed when a bitten apple gradually turns brown. Although there is evidence that avocado seeds were already used for dyeing during the time of the Spanish conquistadors (around the 15th century), the precise structure of this dye was only determined recently.

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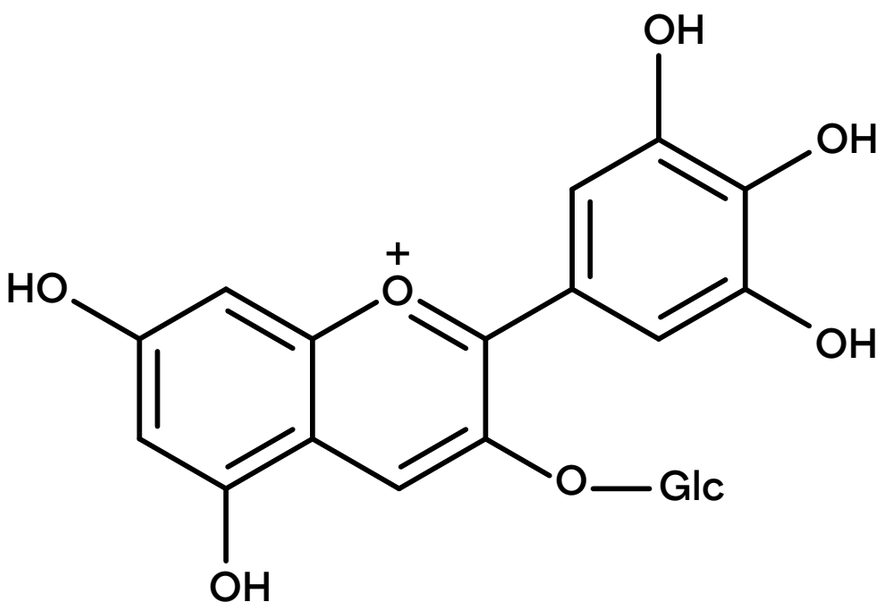
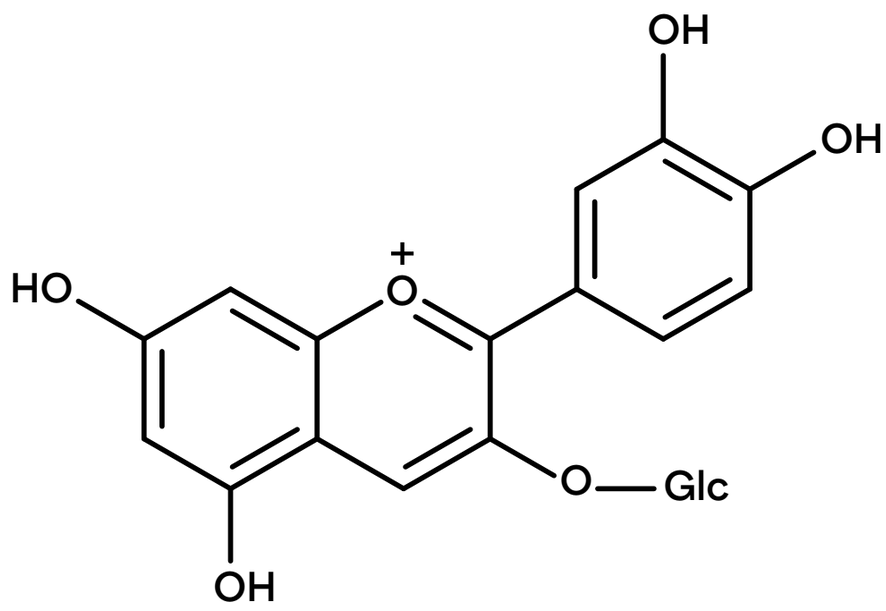


DELPHINIDIN-3-*O*-GLUCOSID



CYANIDIN-3-*O*-GLUCOSID

ANTHOCYANINS

Anthocyanins are the most important pigments in the plant world and particularly striking, as in our regions they are responsible for the red, blue, and violet hues in flowers and fruits. Chemically, they are composed of a basic framework of three six-membered rings. The wide range of anthocyanin compounds – from light orange to deep blue – arises from often only very slight modifications (such as hydroxylation, glycosylation, methylation, etc.).

A distinctive feature of anthocyanins is their ability to change color depending on the acidity level. This explains why adding a splash of vinegar can turn “blue” cabbage into “red” cabbage. The different colors at varying pH values result from structural changes caused by the attachment or release of protons (in acidic conditions) and hydroxide ions (in alkaline conditions).

BIOFABRIQUE VIENNA

WIENER FARBEN

MORDANTS AND NATURAL DYES

Dyeing with natural substances is among the oldest cultural techniques of humankind. Plants, minerals, and fungi provide a surprising variety of shades – from gentle earth tones to vibrant colors. For these dyes to adhere permanently to textiles, mordanting is necessary.

In this process, fibers are treated with metal salts such as alum or iron, which bind to the fibers and form stable metal complexes – so-called chelates – with the dye molecules. This chemical connection makes the colors resistant to washing and light. At the same time, each salt influences the hues, so that a single plant source can yield multiple shades.

Not every dye and not every textile is suitable for this process: natural fibers such as cotton or silk respond most reliably.

A PROJECT BY
Vienna Business Agency

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