Diffractic acid isolation and its activity against respiratory syncytial virus

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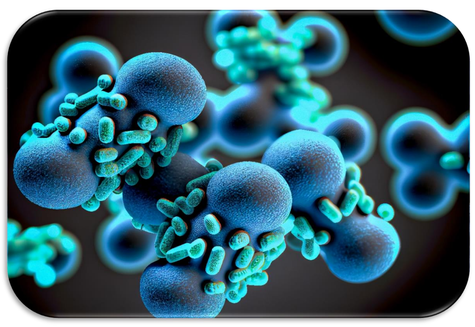
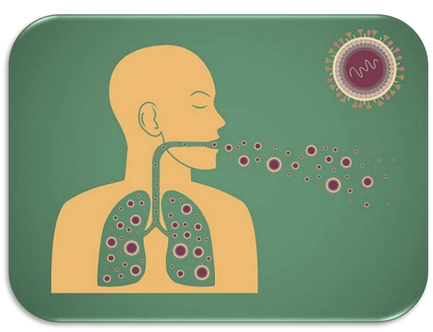
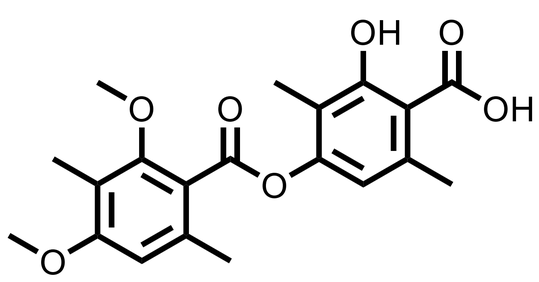
Respiratory syncytial virus infection (RSV) is currently a widespread disease worldwide, which is severe in the elderly and young children, leading to severe complications and even death. Several groups of researchers around the world are actively developing antiviral agents against RS infection, but none of them is yet suitable for widespread use in clinical practice.





No specific etiotropic therapy currently exists

Diffractic acid



Diffractaic acid is one of the major secondary metabolites of many lichens. This compound is known to have moderate antibacterial and insecticidal properties, as well as antiulcer and hepatoprotective activity.

Our group developed an isolation technique and isolated diffractaic acid from a mixture of lichens of the genus Usnea.

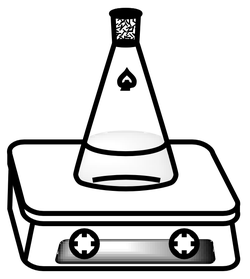
A mixture of lichens *Usnea*

Ethanol solution of a chloroform extract of *Usnea* licheniformis

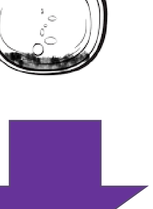
The solvent was removed under reduced pressure

The residue after the extraction usnic acid Diffractaic acid content in the mixture 55%

Benzene



Light brown precipitate



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Diffractaic acid content in the mixtureof lichens *Usnea* 0.97%

Yellow precipitate

Usnic acid

Tests on the ability to inhibit RSV reproduction in vitro showed that diffractaic acid has significant antiviral activity against RSV.

EC_{50} = 4.8 μM
CC_{50} = 221.9 μM
SI = 46.

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