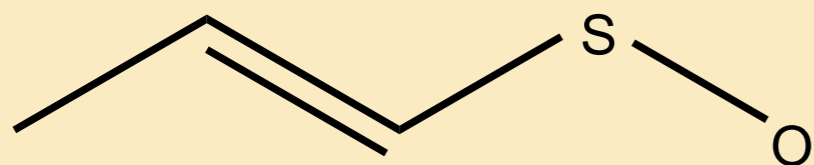
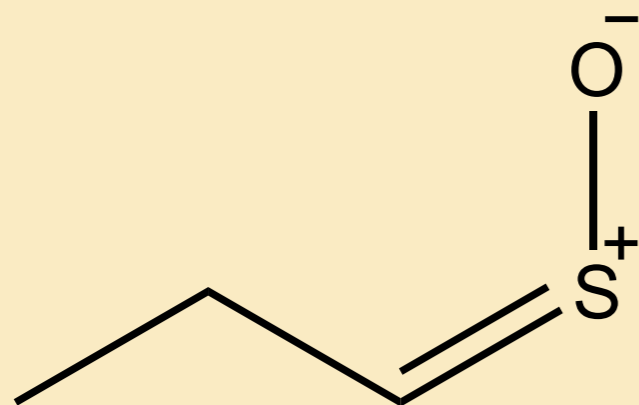


THE CHEMISTRY OF AN ONION

AMINO ACID SULFOXIDES



1-PROPENESULFENIC ACID

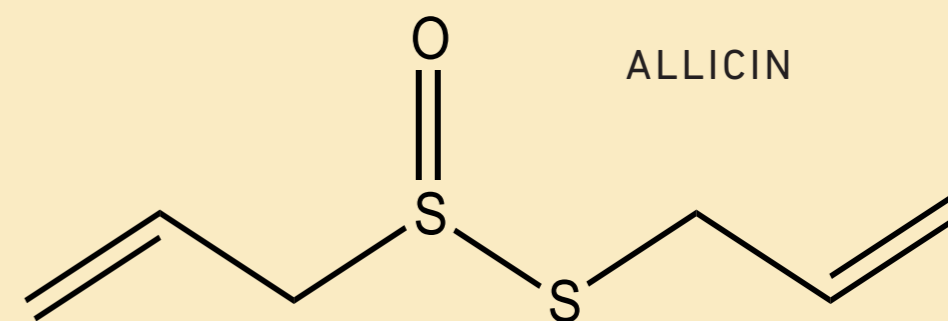
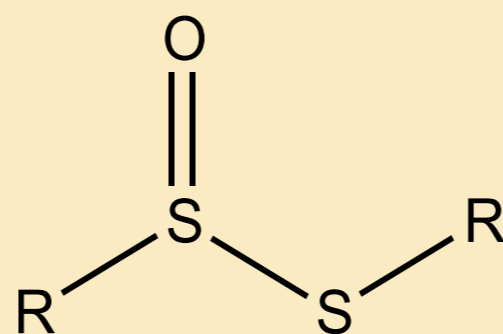


SYN-PROPANETHIAL-S-OXIDE

As onions are sliced, they release a class of enzymes, allinases, which break down amino acid sulfoxides. A specific compound produced during this process is 1-propenesulfenic acid, which is rearranged by another enzyme, called lachrymatory factor synthase, to produce syn-propanethial-S-oxide. Production of this gas peaks 30 seconds after mechanical damage to the onion, and it stimulates sensory neurons in the eye causing a stinging sensation; the eye therefore produces tears to flush it out.



ONION ODOUR & THIOSULFINATES



ALLICIN

Thiosulfinates are the primary flavour and odour producing molecules in an onion. These compounds are not present in intact bulbs, but are formed via enzymatic reaction from sulfur amino acids. Alliin is one of these compounds, which in turn quickly breaks down to form other sulfur-containing compounds.