ঝাল ও ঝাঁঝ

Heat and sting

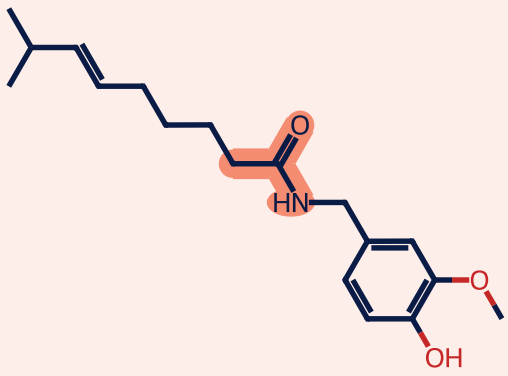
Six kitchen molecules that burn, sting and make you cry.

1 Heat and sting · 2 Aroma · 3 Taste and tricks

The coloured glow marks the working part of each molecule.

Chem2Cure — Institute for Chemical Research and Therapeutics

01 · 305.4

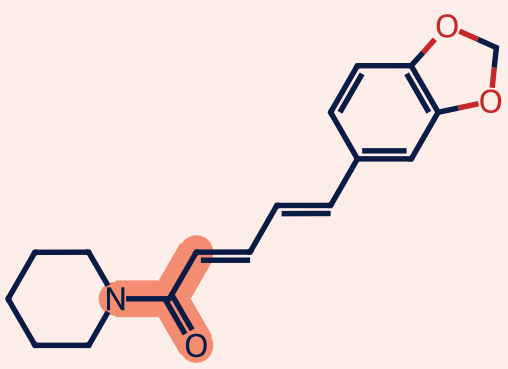


$C_{18}H_{27}NO_3$

CAPSAICIN

মরিচ — Chilli

02 · 285.3

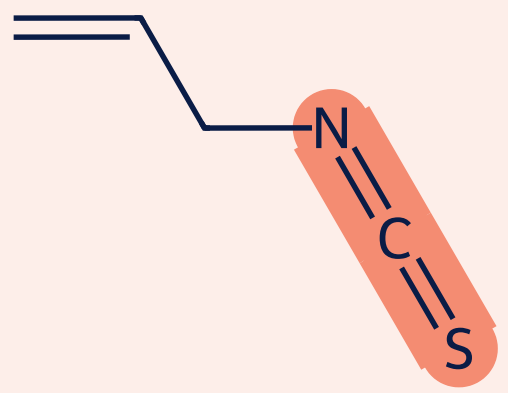


$C_{17}H_{19}NO_3$

PIPERINE

গোলমরিচ — Black pepper

03 · 99.2

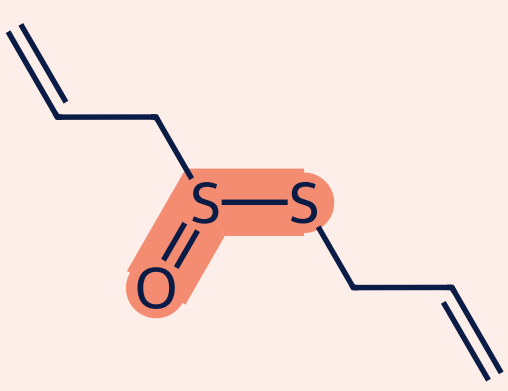


C_4H_5NS

ALLYL ISOTHIOCYANATE

সরিষা — Mustard

04 · 162.3

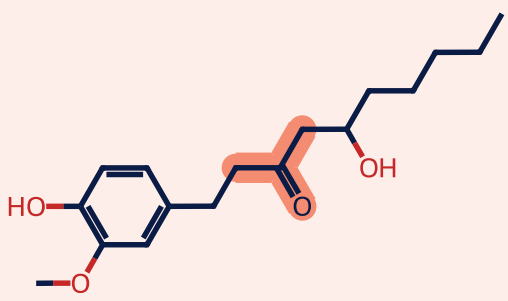


$C_6H_{10}OS_2$

ALLICIN

রসুন — Garlic

05 · 294.4

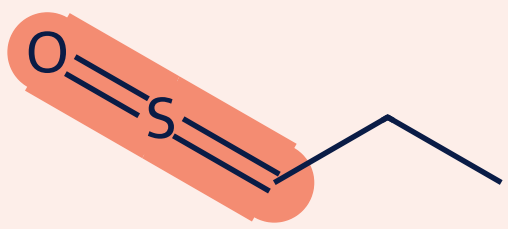


$C_{17}H_{26}O_4$

6-GINGEROL

আদা — Ginger

06 · 90.1



C_3H_6OS

PROPANETHIAL S-OXIDE

পেঁয়াজ — Onion

HOW TO READ A TILE

Like an element, but tastier

01 · 305.4	The number, and the molar mass in g/mol
Drawing	The molecule, with its working part glowing
$C_{18}H_{27}NO_3$	Its formula
Band	The ingredient, in Bangla and English

GOOD TO KNOW

The heat sensors

Chilli and black pepper switch on TRPV1, a sensor in your nerves that detects heat. Mustard and garlic switch on TRPA1, a sensor for irritants. The 2021 Nobel Prize in Physiology or Medicine honoured the discovery of the body's temperature and touch sensors, and David Julius found TRPV1 using capsaicin.

GOOD TO KNOW

Cool the burn

Capsaicin dissolves in fat, not in water, so a drink of water just spreads it around. Milk and yoghurt work better: the fat dissolves it, and casein, a milk protein, grabs hold of it.

TRY IT AT HOME

Two experiments for the kitchen table.

Mustard, dry and wet

Crush a few dry mustard seeds and smell them: mild. Add a drop of water and crush again. The sting appears, because allyl isothiocyanate forms only when water is there.

Garlic, whole and crushed

Smell a whole garlic clove, then crush it and smell again. Crushing starts the reaction that makes allicin.

Ask an adult first. Never taste an experiment.

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All three kitchen posters, and more

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