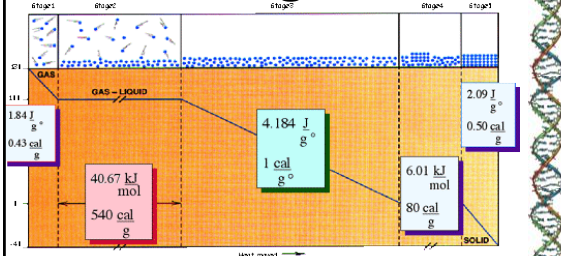


Phase Changes



What is the energy needed to take 1g H₂O at 0°C to 100°C ? **540+100+80=720cal**

Image: <http://teachmeanatomy.com/phasechanges>

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Egg Whites – Whip It!

Foams – Meringue (albumin only)

Review micelles – water/air interface

Similar in concept to whipped cream or yogurt curdling

Mechanical shearing of protein bundles

Soft foam – water lubricates bubbles

Hard/Stiff/Dry peaks – protein bubble walls squeeze out excess moisture

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Cream of Tartar

Potassium tartrate – adds acid

Prevents disulfide bond formation

Proteins need to interact, but not TOO strongly

2 Cys residues

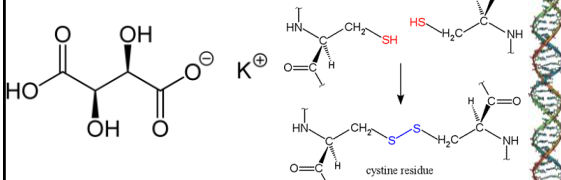


Image: http://en.wikipedia.org/wiki/File:Weinstein_Strukturformel.png

Image: http://juweb2.gonzaga.edu/faculty/cronk/biochem/D-index.cfm?definition=disulfide_bond

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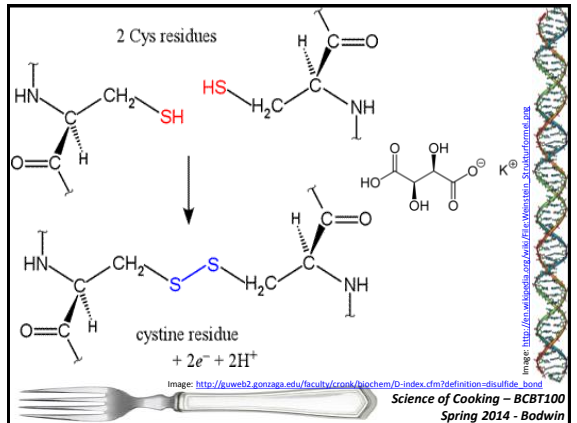


Image: http://juweb2.gonzaga.edu/faculty/cronk/biochem/D-index.cfm?definition=disulfide_bond

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Setting White Foams

Heating dehydrates

Ovalbumin denatures at higher T

Secondary network, reinforces

Role of sugar

Strengthens “cages” with sugar strands

Delays dehydration (ovalbumin denature)

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Whipped yolks

Fat prevents foam

A little yolk ruins a meringue

Air bubbles lighten color

Low “free” water content

The beginnings of a custard

Network of egg proteins

Suspends milk fat

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Whipped Whole Eggs

Not as fluffy as whites

Not as silky as yolks

Will they foam?



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Cooking Eggs

Balance of fat, protein, water, air

Water – high heat capacity

Fat – solidifies, liquifies, separates

Protein – denatures or not?

Air – excellent insulator {Why?}



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