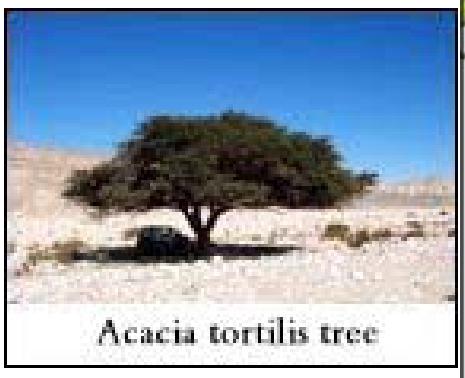
Coacervation:

- complexation of proteins or ionized polysaccharides by crossing the pI to cause ionic interactions. The complexation is often done on suspensions of oil in water, creating microcapsules.

Starting Ingredients:
GUM ARABIC

When acacia stems are cut or injured, they often exude a clear, gummy substance which helps to seal the wound and prevent infection by fungi and bacteria. Chemically, this natural gum is a water-soluble polysaccharide composed of many sugar molecules joined together. Natural plant gums are used as thickening agents and emulsifiers in food products, cosmetics and pharmaceuticals. Gums produce the thick, rich consistency of sauces and syrups, prevent the formation of ice crystals in frozen desserts, and stabilize the foaming in beer.

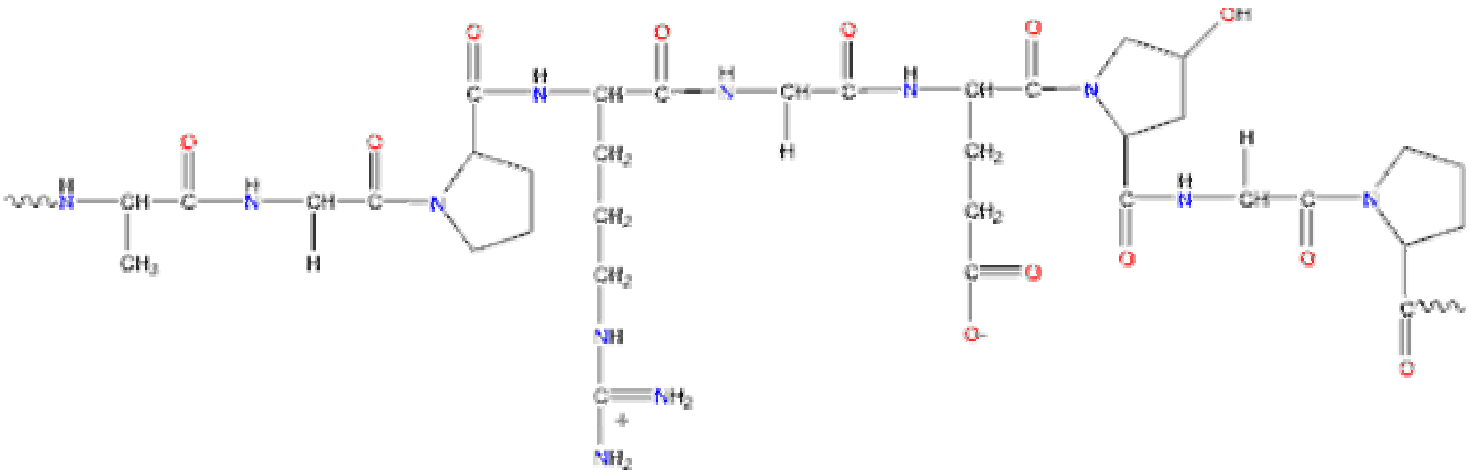
Acacia has a net negative charge.


Acacia tortilis tree

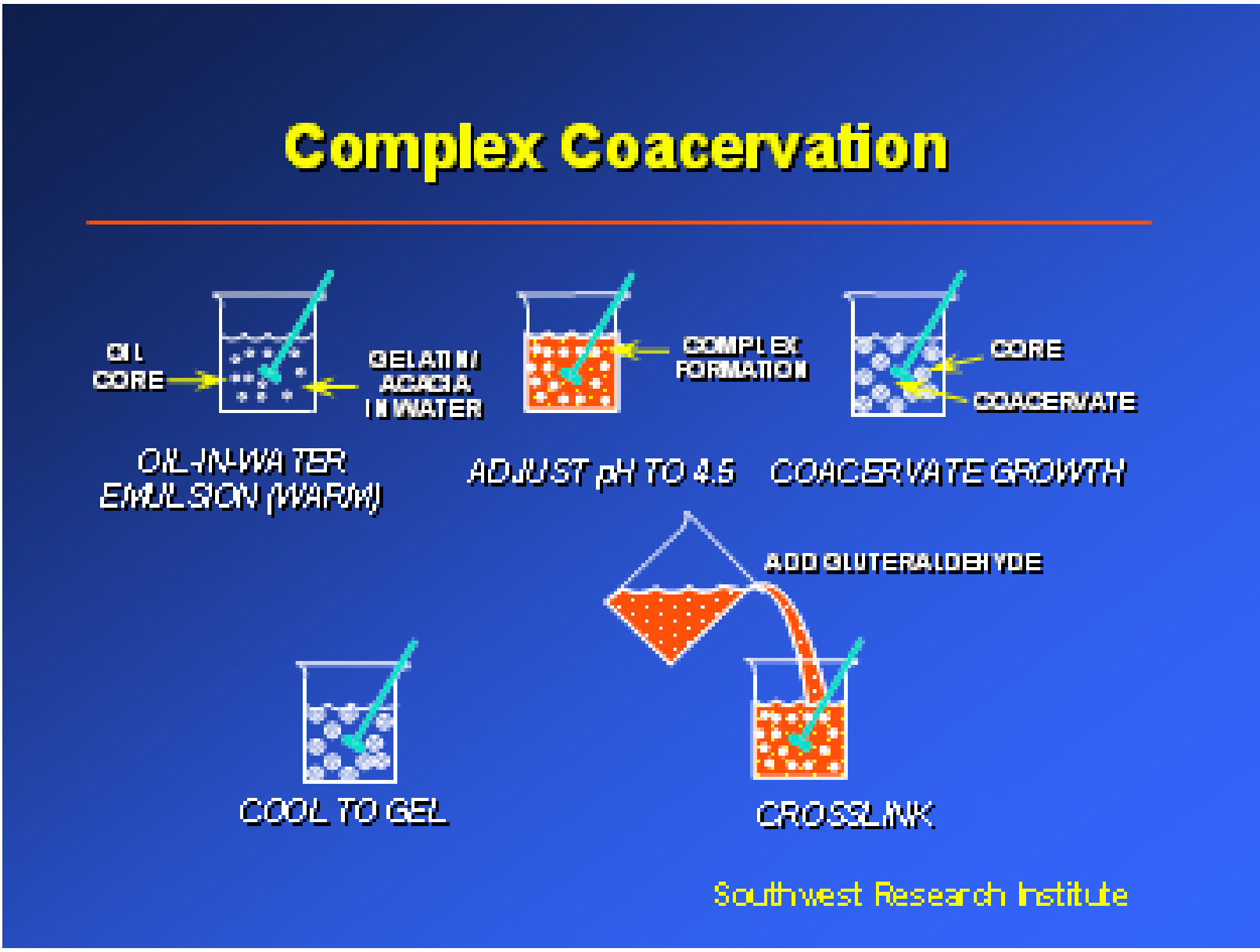

spray-dried gum arabic

Gelatin is a heterogeneous mixture of single or multi-stranded polypeptides, each with extended left-handed proline helix conformations and containing between 300 - 4000 amino acids. The triple helix of type I collagen extracted from skin and bones, as a source for gelatin, is composed of two α1(I) and one α2(I) chains, each with molecular mass ~95 kD, width ~1.5 nm and length ~0.3 μm. Gelatin consists of mixtures of these strands together with their oligomers and breakdown (and other) polypeptides. Isoelectric point (pI) is around 5.0.

spray-dried gelatin



Microencapsulation process



Microcapsules made by coacervation