Infographic: Meet Asgard archaea, a simple cell that just might look like one of our oldest relatives

The cells of all animals, plants, and fungi have an impressive complexity, with a variety of compartments specialized in various tasks, like generating energy, digesting proteins, or holding DNA. If you look at bacteria or archaea, however, their interiors are essentially featureless. How did this cellular complexity come about?

A key thing that has limited our understanding here is that we've never gotten a sense of what the ancestors of complex cells looked like. Over the last several years, we've found increasing genetic evidence of the existence of modern descendants of [early cells] … . On [August 13], however, a paper reports on the success of a decade-long attempt to get one of these to survive in culture. And the resulting microbes look very weird—but weird in a way that hints at how complex cells evolved.

cell x
Image not found or type unknown

Under some circumstances, the cells would form lots of membrane protrusions that jutted out from their surface. Under others, they would stretch out long filaments.

The research team suggests that these protrusions normally interact with the symbiotic bacteria, increasing the ability to shuttle hydrogen out of cells and have it metabolized away. And, the researchers argue, this provides a clear model for how complex cells came about.

Read full, original post: We've finally gotten a look at the microbe that might have been our ancestor