

INTRODUCTION

Microbes are undoubtedly cool, but the problem is that you can't really see them to appreciate their coolness. I mean, yes, you can see them with a light microscope, but you need to stain them first, and even when you stain them there isn't much to see unless you've been doing this for many years and have developed a fine esthetic sense for what makes a handsome microbe. And yes, you can see them in great detail with an electron microscope (scanning or otherwise) but few people carry an electron microscope around in their pocket just to impress their friends. So unlike chemists, who can simply grab a hunk of gold or platinum from their backpack and do show and tell, microbiologists often need to describe what's cool about an organism by talking about what it does, rather than simply what it is. Plus, most of the time, you really wouldn't want to grab a hunk of microbial stuff that's in your backpack, unless you have chocolate, wine, cheese, and bread; or, for that matter, any of hundreds of food items that get their start with microbes.

The Small Guide to Small Things in The Periodic Table of Microbes is small for a reason; there is simply not enough paper (or pixels or bytes) to describe everything that is known about microbes. And even if you tried, the book would be too heavy, or the file size too large, for anyone but the most dedicated professional microbe hunters. (Seriously, there are more than 15,000 named microbes.) Of course, by taking the small approach, every professional microbe enthusiast will take offense that only a single page (!) of 300 or so words was given to their favorite organism. To them, and everyone else, I say don't focus on what you already know; use The Small Guide and The Periodic Table of Microbes to cultivate your appreciation for microbial culture.

Many microbial things are almost never mentioned in The Small Guide because you can look them up elsewhere if you've fallen in love with a particular microbe. My favorite trait to *not* mention is motility, because no microbe will move as fast as a truck or airplane full of Listeria-tainted food. Other things that don't get mentioned are DNA sequences and ribosomal RNA sequences; and stuff like serotypes, biotypes, fermentation patterns, and nutritional requirements are hardly mentioned at all. Taxonomy, The Small Guide is not!

The criteria for inclusion in The Periodic Table of Microbes was the best match between accepted chemical symbols and the proper names and initials of microbes, all sorted heavily with a subjective bias to what is cool, unique, and memorable. Membership in The Periodic Table of Microbes means that you need a microscope to see it (usually), that it is most likely a prokaryote (a bacterium or an archaean), and that it is not a virus (which are listed in The Periodic Table of Viruses) or a complex parasite (which are listed in The Periodic Table of Parasites).

What makes something cool, unique, or memorable has a lot to do with popular culture and history, and the connections intrepid microbiologists can make between the microbial world and the larger world. You will find that The Small Guide to Small Things has cultural references that range from SpongeBob SquarePants to The Game of Thrones, with an occasional Nobel Prize and Dr Who episode thrown in.

For more information on any of these critters, check the internet. A simple Google or Google Scholar search will lead to countless articles and academic web sites, all of which have more data than you can shake a stick at. Two important sites are PubMed (run by the US National Library of Medicine of the National Institutes of Health) and Bacterio.net (which provides information on every known and recognized microbe).