

'Discovery' versus 'Invention'

What is a discovery?

A **discovery** is the finding or recognition of something that already exists in nature or reality but was previously unknown or unrecognized by humans. It does *not* involve creating something new—only uncovering or understanding it.

Examples of discovery

- DNA structure: The double-helix structure was *discovered*, not invented
- Discovering a new cell type or signaling pathway
- Identifying a protein–protein interaction
- Discovering a gene mutation associated with disease

What is an invention?

An **invention** is the creation of something entirely new, developed through human ingenuity, design, and experimentation. It did not previously exist in its created form.

Examples of an invention

- Synthetic drugs (e.g., aspirin formulations, chemotherapy drugs) – Designed and manufactured compounds that did not exist naturally in usable form.
- Vaccines – Engineered biological preparations that stimulate immunity (even when based on natural pathogens, the formulation is an invention).
- Monoclonal antibody therapies – Lab-invented antibodies designed to target specific disease molecules.
- mRNA vaccines – A modern invention using engineered RNA delivery systems to prompt immune responses.