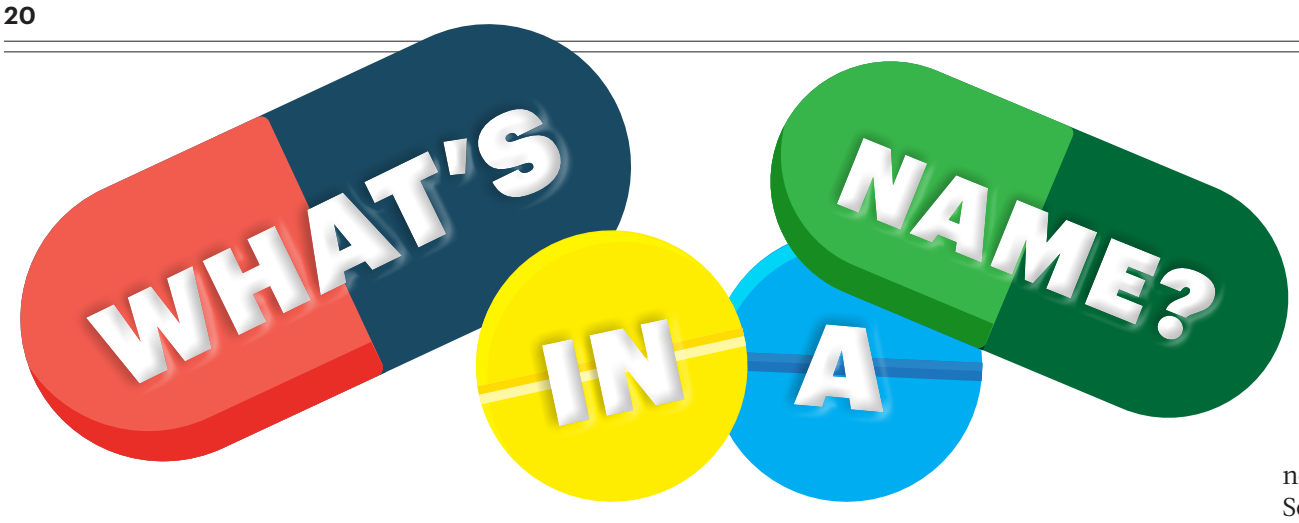

It can take over 10 years and $1 billion to get a drug to market. So how do you name it when it finally gets there?

BY SARAH KWON
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Macrilen. Steglatro. Rhopressa.

These may sound like alien characters from a science fiction novel, but they're brand drug names. This begs the question: How do drugs get such strange names?

"Drug names are intentionally crafted to sound like nothing else that exists," said Scott Piergrossi, vice president of creative at the Brand Institute, a branding agency based in Florida with a San Francisco office.

Medication errors can happen when drug names sound or look alike. To reduce this risk, the U.S. Food and Drug Administration (FDA) extensively reviews proposed brand drug names, and rejects those that don't differ enough from existing names. Without FDA approval of a drug and its brand name, a company can't take a branded drug to market. A name resembling another could also violate trademark laws.

Uniqueness isn't enough. The FDA rejects names that it believes makes false claims, such as a name that sounds like "best." Beyond meeting FDA and regulatory requirements of any other countries where the product will launch, a drug name should be memorable – for the right reasons. Names with offensive connotations in other languages could spell marketing disaster.

Deciding if a company has found a good name also depends on what it wants. Piergrossi said good names create associations that a company wants the drug to have.

"The letter 'v' can communicate a drug's rapidity," he said. "A soft consonant can communicate gentleness." While some drug names try to create associations with product attributes, others aim to suggest the condition they're treating or type of drug they are. For example, Tamiflu treats influenza, while Yescarta is a CAR-T therapy.

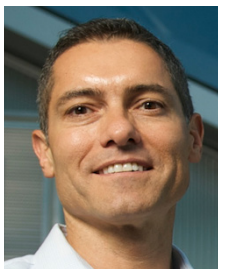
With so many criteria to meet, naming becomes a numbers game. Brand Institute brainstorms up to 1,000 possible names for each naming engagement, but a preliminary screening to identify potential trademark and regulatory conflicts eliminates up to 900 of those options, said Piergrossi.

The stakes are especially high for companies deciding what to name their first product. "It's like naming your first child," said Raul Rodriguez, CEO of Rigel Pharmaceuticals, a clinical-stage biotechnology company that launched its first drug in late May to treat chronic immune thrombocytopenia, a rare platelet disorder. "The name will be the first time that patients are exposed to our company."

Rigel's leadership wanted a "warm," "approachable," and "pronounceable" name, said Rodriguez. The South San Francisco company ultimately chose Tavalisse. "Tava sounds very warm. A is a warm vowel, like 'mama'," he said. "And 'lisse' rolls off the tongue and stays there, like a balloon letting out the air."

Between creative brainstorming, regulatory steps, trademarking, and testing the name with doctors and consumers, the naming process took a little over a year. "It's worth spending the time to get the name right," Rodriguez said. The FDA approved the name last year and the drug in April.

It's not uncommon for companies to invest significant resources in naming. Piergrossi said the process takes months, sometimes years for a company, and average branding agency fees for a naming engagement can range from $75,000 to $250,000, depending on the agency and project scope.


Raul Rodriguez

But this pales in comparison to the total investment in drug development, which takes, on average, over a decade for a drug. "The total cost to develop a drug is about $2 billion," said Maria Fardis, CEO of Iovance Biotherapeutics, a clinical-stage cancer immunotherapy company headquartered in San Carlos. "So the cost of developing a brand name is a drop in the bucket."

OK, I'VE GOT A NAME. NOW HOW DO I PICK A COLOR?

In addition to name, a drugs color become an integral part of the drug's identity (think Viagra or Nexium). The FDA does not have specific rules regarding the color of drugs, leaving companies largely free to choose colors. In addition to studies that have shown patient associations — one study found patients preferred a yellow antidepressant to a red or green one — chemical requirements can also play a role. Patent rules (a generic drug must be a different color than its brand equivalent) and safety (different colors help patients and caregivers avoid mixing up pills) are other considerations.

WHAT ABOUT THE LONG, HARD-TO-PROUNCE NAMES?

In addition to a brand name, every brand drug has a generic name and a chemical name. A generic name, coined by the United States Adopted Names Council (USAN), indicates what the drug does or its mode of action, while a chemical name describes the drug's chemical structure.

Each generic name has a prefix and stem. The prefix has no special meaning. "The sole purpose of a prefix is to differentiate a drug from other members of the class," says USAN. The stem indicates the pharmacologic family to which the drug belongs. Some drugs have additional components for further classification, known as infixes, located between the prefix and stem.

Here are generic name breakdowns for some of 2016's top selling prescription drugs in the US.

HUMIRA
(treats autoimmune conditions)

Targets immune system | Human antibody sequence

ADALIMUMAB

Monoclonal antibody

REMICADE
(treats autoimmune conditions)

Chimeric antibody sequence: based on antibodies of two different species

INFLIXIMAB

Targets immune system | Monoclonal antibody

HARVONI
(treats Hepatitis C)

Nonstructural protein 5A (NS5A) inhibitors

LEDIPASVIR

Antiviral

Phosphoro-derivative | RNA polymerase (NS5B) inhibitors

SOFOSBUVIR

Antiviral

ENBREL
(treats autoimmune conditions)

Tumor necrosis factor receptors

ETANERCEPT

SOURCES: AXIOS, WORLD HEALTH ORGANIZATION, AMERICAN MEDICAL ASSOCIATION