

TABLE 1

Categories of Canine Vaccines Based on Physical Type of Immunizing Antigen

TYPE	ALTERNATIVE NAMES	DESCRIPTION	EXAMPLES*
Attenuated	<ul style="list-style-type: none"> • Live • Modified live • Live attenuated 	<ul style="list-style-type: none"> • Immunogenic with long duration of immunity; induces both cellular and humoral immunity • More likely to prevent both infection and disease • Certain vaccines may result in a transient period of viral shedding of the attenuated/modified virus • Reversion to virulence theoretically possible but unlikely in appropriately tested and licensed vaccines • Requires careful storage (usually refrigeration) and handling (administer promptly after reconstitution) 	<ul style="list-style-type: none"> • Most canine distemper virus and parainfluenza virus vaccines • All canine parvovirus and adenovirus-2 vaccines
Inactivated	<ul style="list-style-type: none"> • Killed 	<ul style="list-style-type: none"> • Stable products that cannot induce disease in the animals • Less immunogenic and with shorter duration of immunity than attenuated products • Generally require an adjuvant to induce sufficient immunity; may require more frequent administration • May be more associated with adverse reactions • May not protect against infection (instead protect against disease) 	<ul style="list-style-type: none"> • Canine rabies and influenza vaccines • Whole cell bacterin vaccines <ul style="list-style-type: none"> • Some canine Lyme disease vaccines • Some canine leptospirosis vaccines • Parenteral <i>Bordetella bronchiseptica</i> vaccine
Recombinant	<ul style="list-style-type: none"> • Subunit • Polysaccharide • Conjugate • Chimeric • Viral-vectored 	<ul style="list-style-type: none"> • Uses a gene of the pathogen inserted into a virus or bacterial plasmid, or a single protein, alone or in combination with other antigens • Significant variability in this category in terms of immunogenicity and frequency of booster doses 	<ul style="list-style-type: none"> • Canarypox virus-vectored canine distemper vaccine • Some canine Lyme disease vaccines <ul style="list-style-type: none"> • Plasmid-expressed or engineered antigens
Toxoid		<ul style="list-style-type: none"> • Creates immunity to the toxin produced by the organism rather than the organism itself • Generally the shortest duration of immunity of vaccine types 	<ul style="list-style-type: none"> • Western diamondback rattlesnake (<i>Crotalus atrox</i>) toxoid vaccine

*A list of licensed veterinary biologics is available at www.aphis.usda.gov/aphis/ourfocus/animalhealth/veterinary-biologics/ct_vb_licensed_products.

The 2022 AAHA Canine Vaccination Guidelines are available at aaha.org/canine-vaccinations.

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