

**Table1: Strategy and the race of 9 pharmaceutical companies around the world for producing vaccines against COVID-19[14]**

Sr.no	Company name	Collaboration	Type of vaccine	Trial Stage	countries	
1	Johnson & Johnson	Biomedical Research & Development Authority	Advanced & Authority	Version of common cold virus to deliver a corona virus pathogen into cells to promote the immune system	Phase I	USA
2	Pfizer	BionTech (BNTX)	mRNA		Phase I	US/Germany
3	Moderna	National Institute of Allergy and infectious diseases, Lonza Ltd.	mRNA		Phase II	US
4	AstraZeneca PLC	Oxford university	Weaker version of the common cold virus with some genetic materials of SARS-CoV-2		Phase II	U.K
5	GlaxosmithKline	Sanofi	Combination of a technology that produce S protein found in SARS-CoV-2 with an immunological agent		Phase I	Uk,France
6	CanSino Biologics	Precision Nanosystem	Adenovirus S-vectored COVID-19 vaccines 2) mRNA		Phase I	China
7	Sinovac	Dynavax	Combination of Sinovac's chemically inactivated SARS-CoV-2 vaccine candidates with Dynavax immunological agent		Phase I	China/US
8	Novavax	N/A	Combination of Sprotein found in SARS-CoV-2 with company's nanoparticle technology		Phase I	US