

Category	Examples	Mode of Action	MHC I Presented	MHC II Presented	Cytokine Response	Isotypes Produced
Mineral Salts	Al(OH) ₃	Enhanced localization, extended Ag release, localized cytokine production to stimulate APC	No	Yes, poor CMI	IL-3, -4, -5, -6	IgG1 and/or IgE
Oil Emulsions	Freund's incomplete (FCI), montanide, specol, squaline	Extended Ag release via increased hydrophobicity, target to and endocytosis by APC, Ag presentation on microsphere surface, macrophage activation	No	Yes, good CMI	IL-4	IgG1 and/or IgE
Microbacterial Products	LPS, MDP, MPL, TDM, CWS, Freund's complete (FCA)	B and T cell stimulation, macrophage activation, complement activation, enhanced Ag uptake	No	Yes, good CMI	IFN- γ , IL-4	IgG2a, 2b, IgG1 and/or IgE
Synthetic Products	Block co-polymers, liposomes	Macrophage activation, complement activation	No	Yes, good CMI	Not known	IgG2a, 2b

Ag: antigen, APC: antigen-presenting cell, CMI: cell-mediated immunity, CSW: cell wall skeleton, IL: interleukin, IFN: interferon, LPS: lipopolysaccharide, MDP: muramyl dipeptide, MHC: major histocompatibility complex, MPL: monophosphoryl lipid A, TDM: trehalose dimycolate