Supplemental Table 2 Potential mechanisms of mast cell activation in innate or acquired immune responses

Mechanisms/stimuli of mast cell activation	Preformed mediators	Cytokines, chemokines & growth factors
Immune receptor mediated[1,2,3]:		
• IgE (FcεRI)	+	+
• IgG1 (FcγRIII-mouse; FcγRI-human mast cells treated with IFN-γ)	+	+
• Ig-binding superantigens:		
Endogenous (protein Fv in HBV & HCV),	+	+
Bacterial (*S. aureus* Protein A, *P. magnus* Protein L)	+	?
Viral (HIV gp120)	+	+
Complement receptor mediated[1,2]:		
• Products of complement activation (C3a/C3aR, C5a/C5aR, C3b/CR3, C4b/CR4)	+	?
Toll like receptor mediated[1,4,5]:		
• Peptidoglycan (TLR2)	±	+
• ds viral RNA, poly (I:C) (TLR3)	-	+
• LPS (TLR4/CD14)	-	+
• Flagellin (TLR5)	-	+
• ss viral RNA (TLR7)	-	+
• CpG-DNA (TLR9)	-	+
Pathogens and their products[1,2]:		
Bacteria		
• CD48 coreceptor: *E. coli* FimH	+	+
• Toxins: *C. difficile* toxin A	-	+
Cholera toxin	-	+
VacA (cytotoxin of *H. pylori*)	-	+
• Hemolysins	+	?
• *Pseudomonas aeruginosa*	low	+
Viruses:		
• Influenza virus, respiratory syncytial virus, type I reovirus,	-	+
• Dengue virus	-	+
• Sendai virus	+	?
Parasites:		
• *Schistosoma mansoni*	+	?
• *Leishmania major*	+	+
Endogenous peptides, cytokines & inflammatory mediators[2,6,7,8,9]:		
• Neuropeptides (e.g., Substance P, neurotensin, etc.)		
• β-defensin 2	+	+
• LL-37	+	?
• Endothelin-1	+	?
• SCF	+	?
• IL-12	±	+
• TNF	-	+
• IL-1	+	?
• PGE2	-	+
Venom components[10,11,12]	-	+
• Phospholipase A2	+	+
• Mastoparan (from wasp venom)	+	?

Note: In general, stimulation of mast cells via immune receptors also results in the release of lipid-derived mediators; for most of the other stimuli, the ability to induce the secretion of lipid-derived mediators has not been investigated. Not all mast cell populations respond to each of the stimuli listed, and the responsiveness of at least some mast cell populations to some of these stimuli can be modulated by systemic or local factors affecting mast cell phenotype. In some cases, the responses listed have been reported only in studies of *in vitro*-derived mast cells and/or only in mast cells from a single species. + : the response has been reported (however, the amounts of such products released can vary greatly depending on the type of mast cell and type of stimulus); - : the response was not detectable ± : minimal response and/or equivocal findings; ? : not examined or reported.

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