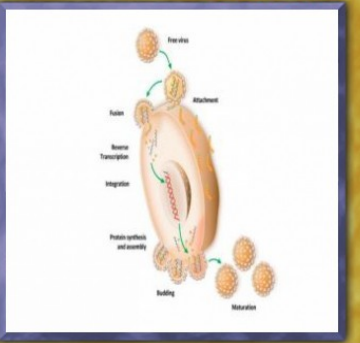
BIOL 1110- 23.8.1



[CH.23&35]
1. Attachment 2. Enters by endocytosis 3. RNA to DNA 4. Viral DNA to the host's nucleus 5. Viral DNA to be replicated by host 6. Viral RNA buds off

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BIOL 1110- 23.8.2

[CH.23&35]

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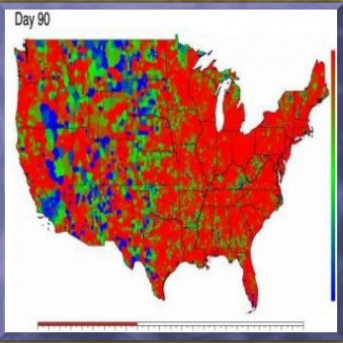
BIOL 1110- 23.8 #1



[CH.23&35]
Pandemic spreads through regions by human pop.
3 conditions for it to occur:
1. Must have novel combination of N & H spikes 2. replicate in human=death 3. must be efficiently transmitted by humans

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BIOL 1110- 23.8 #2

Innate vs adaptive immunity

	innate	adaptive
self / non-self discrimination	present, reaction is against foreign	present, reaction is against foreign
lag phase	absent, reponse is immediate	present, response takes at least a few days
specificity	limited, the same response is mounted to a wide variety of agents	high, the response is directed only to the agents that initiated it.
diversity	limited, hence limited specificity	extensive, and resulting in a wide range of antigen receptors.
memory	absent, subsequent exposures to agent generate the same response	present, subsequent exposures to the same agent induce amplified reponses

[CH.23&35]

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BIOL 1110- 35.8.1

Table 1. Properties of Pattern Recognition Receptors

PRR	Localization	Ligands	Ligand Sources
TLR Toll-like receptors	Plasma membrane	lipoproteins, DNA, RNA, endotoxin, endogenous danger signals	bacteria, viruses, parasites, self
NLR NOD-like receptors	Cytoplasm	endogenous danger signals, muramyl dipeptides	self, bacteria
CLR C-type lectin receptors	Plasma membrane	beta-glucans	fungi
RLR Retinoic acid-inducible gene-1-like receptors	Cytoplasm	double-stranded RNAs	RNA viruses

[CH.23&35]

Soluble receptors activate the complement system

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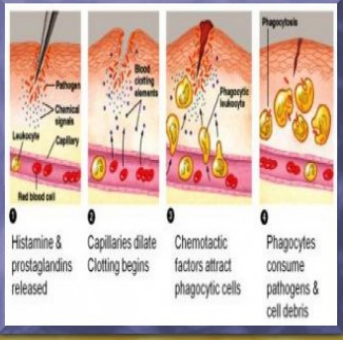
BIOL 1110- 35.8.2



[CH.23&35]

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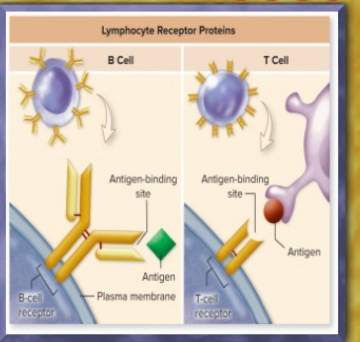
BIOL 1110- 35.8.3



[CH.23&35]
B cells create antibodies and T cells either help cells respond or kill

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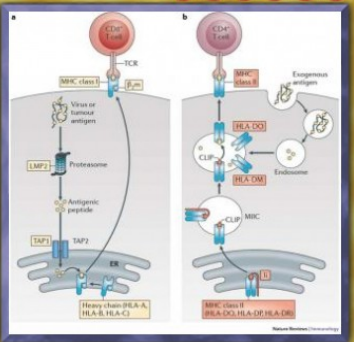
BIOL 1110- 35.8



[CH.23&35]

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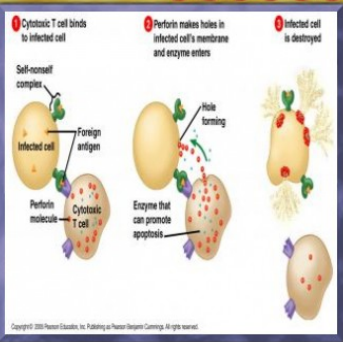
BIOL 1110- 35.9.1



[CH.23&35]

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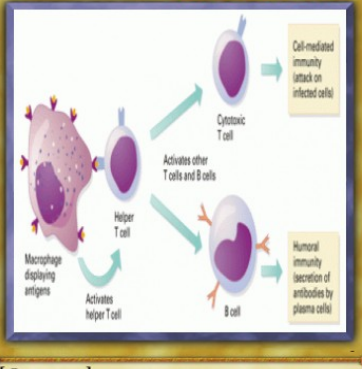
BIOL 1110- 35.9.2



[CH.23&35]

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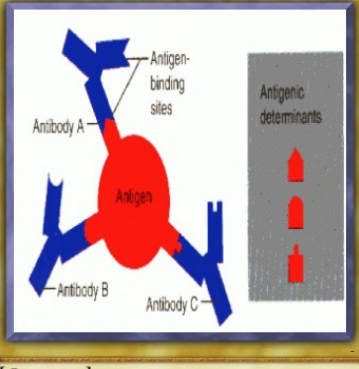
BIOL 1110- 35.9 #1



[CH.23&35]

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BIOL 1110- 35.9 #2

	Humoral-Mediated Immunity	Cell-Mediated Immunity
Mechanism	Antibody-mediated	Cell-mediated
Cell Type	B Lymphocytes	T Lymphocytes
Mode of action	Antibodies circulating in serum	Direct cell-to-cell contact or secreted soluble products (e.g. cytokines)
Purpose	Primary defense against extracellular pathogens: extracellular bacteria, circulating virus	Primary defense against intracellular pathogens: viruses and fungi, intracellular bacteria, (also tumor antigens, and graft rejection)

[CH.23&35]

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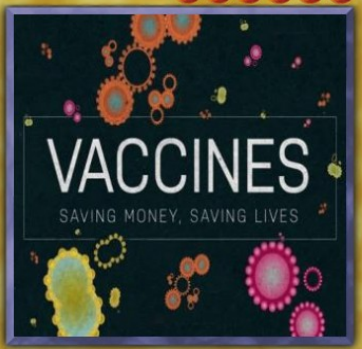
BIOL 1110- 35.10.3



[CH.23&35]
Vaccines make naive memory cells ready when the pathogen really attacks the body by putting dead pathogens into the body

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