

# Kopf exam questions from lecture 10.03.2020

## Single choice

What is the percentage of T cell that die during positive selection?

25%	-
50%	-
75%	-
90%	yes

Patients with a deficiency (null mutation) of CD40 gene..

develop cancer	?
develop autoimmunity	?
amount impaired antibody responses?	?
develop allergy	?
lack T cells	?

Interleukin 2..

activates dendritic cells	- (yes, but not most important one)
is essential for T cell survival	- (essential for development but not for survival, essential for Tregs survival but not general T cell)
stimulates B cells to produce antibodies	-
is secreted after activation of CD4+ and CD8+ T cells	yes (most important)
is essential for adaptive immunity	-

Tbet..

Is a surface receptor	-
Is expressed by dendritic cells	-
Is essential for development of Th1 cells	yes
Induces IL-12	-
Promotes autoimmunity	-

Regulatory T cells..

Promote development of T cell memory	-
Produce IL-4	- (no they produce IL-10)
Mediate rejection of tumors	-
Suppress Th1 and Th2 cells	yes
Inhibit production of antibodies by B cells	-

### Type 1 diabetes..

Is mediated by autoimmune B cells	-
Is mediated by autoimmune T cells	yes
Is mediated by autoimmune macrophages	-
Is a metabolic disease associated with obesity	- (type 2)
Develops due to insulin insensitivity	- (type 2)

### Multiple choice Kprime

#### What contributes to MHC diversity in the human population?

Polygeny	yes
Polymorphism	yes
Allelic exclusion	no
Rearrangement	no

#### MHC class II molecules are expressed on..

B cells	?
Fibroblasts	?
Thymic epithelial cells	yes
Lung epithelial cells	no

#### Defense against gastrointestinal worms requires..

Presentation of worm antigens by MHC class I molecules and killing by CD8+ killing	no
Natural Killer (NK) cells	no
IL-4	yes
Th2 cells	yes

#### Anaphylactic responses against bee venom..

Can be successfully treated with antibiotics	no
Can be successfully treated with drugs that prevent mast cell degranulation	yes
Can be succ. Treated by drugs that block binding of IgG antibodies to macrophages	no
Can be treated by anti-histamines	yes

**Development of autoimmunity is promoted by..**

AIRE deficiency	Yes?
Exacerbated Th2 cell responses	no
FoxP3 deficiency	?
CTLA4 deficiency	Yes?

**Immune mediated tumor rejection can be therapeutically promoted by..**

Blockade of CTLA4 pathway	yes
Blockade of CD28 pathway	no
Blockade of interferon-gamma (IFNg)	no
Blockade of tumor necrosis factor alpha (TNFa)	no

**Bacterial lipopolysaccharide induces..**

NF-kB activation	yes
Secretion of IL-1, IL-6 and IL-12	yes
TLR9 activation	No (but TLR4)
T cell activation	no